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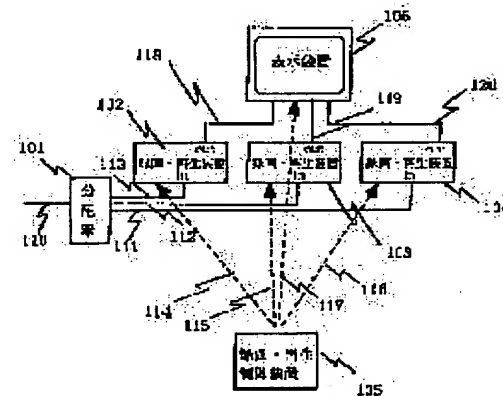
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(57)Abstract:

SOLUTION: A received video signal 110 is distributed by a distributor 101 to be inputted to respective video recording/reproducing devices through signal lines 111–113. A video recording/reproducing controller 105 automatically adjusts the schedule of the video recording reservation of respective video recording/reproducing devices when the information related to respective video recording/reproducing devices in addition to the information required for the video recording reservation are inputted, and thereafter, transmits the video recording reservation data to respective video recording/reproducing devices through the signal lines 114–116. Related to the video recording reservation situation at this time, the controller 105 sends an instruction of display switch control to a display device 106 through the signal line 117, and selects a video recording/reproducing device from the video signal confirmed. The video recording/reproducing devices 102 record videos/audios when the start times of the reserved programs



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CLAIMS

[Claim(s)]

[Claim 1]Recording and a regeneration control device characterized by comprising the following
A data input means which inputs information for recording schedule edit about two or more recording and playback equipment, and reservation of picture recording of a program.

A recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on information for recording schedule edit.

A transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment.

[Claim 2]Information for recording schedule organization A model of recording and playback equipment, a function of recording and playback equipment, Time which can be recorded or capacity of performance of recording and playback equipment, existence of wearing of recording media, and recording media with which it is equipped, Non-picture recording times or capacity of recorded time of recording media with which it is equipped or capacity, and recording media with which it is equipped, Recording and the regeneration control device according to claim 1 being any one or more of a connection state between recording reservation information including a kind, a recording channel, and picture recording times of recording media with which it is equipped, and recording and playback equipment, and the connection states between recording and playback equipment, and a display.

[Claim 3]Recording and playback equipment which is provided with the following, receives a control signal from recording and a regeneration control device according to an identification code, and is characterized by performing recording and playback in alignment with a recording schedule.

A reception means which receives a control signal from recording and a regeneration control device.

A channel selection means to tune in a program.

An image and a voice recording reproduction means which records video information or speech information

An identification code setting-out means to set up a self identification code.

[Claim 4]Have the following and a control signal from recording and a regeneration control device is received according to an identification code, Recording and a reproducing system characterized by performing recording and reproduction motion with recording and playback equipment while it is constituted by recording and playback equipment which performs recording and playback in alignment with a recording schedule and recording and a regeneration control device perform organization and management activities of a recording schedule.

A data input means which inputs information for recording schedule edit about two or more recording and playback equipment, and reservation of picture recording of a program.

A recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on information for recording schedule edit.

A reception means which receives a control signal from recording and a regeneration control device which has a transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment, and recording and a regeneration control device.

A channel selection means to tune in a program, an image and a voice recording reproduction means which record video information or speech information, and an identification code setting-out means to set up a self identification code.

[Claim 5]Recording and the reproducing system according to claim 4 with which two or more sets are connected to one set of recording and a regeneration control device, and, as for recording and playback equipment, one set of said recording and regeneration control device is characterized by said thing [carrying out individual control of two or more recording and playback equipment of a stand] using an identification code.

[Claim 6]Provide a means of communication in which bidirectional communication is possible, and by a control code corresponding to each recording and playback equipment, to each recording and playback equipment, while being ability ready for sending, a control signal, Recording and the regeneration control device according to claim 1 or 2 characterized by being ability ready for receiving about information for recording schedule organization from recording and playback equipment.

[Claim 7]Recording and the playback equipment according to claim 3 characterized by being ability ready for sending about information for recording schedule organization while providing a means of communication in which bidirectional communication is possible and receiving a control signal from recording and a regeneration control device.

[Claim 8]Information for recording schedule organization A model of recording and playback equipment, a function of recording and playback equipment, Time which can be recorded or capacity of performance of recording and playback equipment, existence of wearing of recording media, and recording media with which it is equipped, Non-picture recording times or capacity of recorded time of recording media with which it is equipped or capacity, and recording media with which it is equipped, Recording and the playback equipment according to claim 7 which is any one or more of a connection state between recording reservation information including a kind, a recording channel, and picture recording times of recording media with which it is equipped, and recording and playback equipment, and the connection states between recording and playback equipment, and a display.

[Claim 9]Have the following and a control signal from recording and a regeneration control device is received according to an identification code, Recording and a reproducing system characterized by performing recording and reproduction motion with recording and playback equipment while it is constituted by recording and playback equipment which performs recording and playback in alignment with a recording schedule and recording and a regeneration control device perform organization and management activities of a recording schedule.

A data input means which inputs information for recording schedule edit about two or more recording and playback equipment, and reservation of picture recording of a program.

A recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on information for recording schedule edit.

By a control code corresponding to each recording and playback equipment, to each recording and playback equipment, while being ability ready for sending, a control signal, While receiving a control signal from [from recording and playback equipment] recording and a regeneration control device which has a means of communication in which bidirectional communication which is ability ready for receiving about information for recording schedule organization is possible, and recording and a regeneration control device, A means of communication in which bidirectional communication which is ability ready for sending about information for recording schedule organization is possible.

A channel selection means to tune in a program, an image and a voice recording reproduction means which record video information or speech information, and an identification code setting-out means to set up a self identification code.

[Claim 10]Recording and the reproducing system according to claim 9 with which two or more sets are connected to one set of recording and a regeneration control device, and, as for recording and playback equipment, one set of said recording and regeneration control device is characterized by said thing [carrying out individual control of two or more recording and playback equipment of a stand] using an identification code.

[Claim 11]Recording and the reproducing system according to claim 5 or 10, wherein two or more recording and playback equipment can assign a control code which has a different control

code for every recording and playback equipment, or is different.

[Claim 12] Information for recording schedule organization A model of recording and playback equipment, a function of recording and playback equipment, Time which can be recorded or capacity of performance of recording and playback equipment, existence of wearing of recording media, and recording media with which it is equipped, Non-picture recording times or capacity of recorded time of recording media with which it is equipped or capacity, and recording media with which it is equipped, Recording reservation information including a kind, a recording channel, and picture recording times of recording media with which it is equipped, Claim 4 or 5 being any one or more of a connection state between recording and playback equipment, and the connection states between recording and playback equipment, and a display, or recording and a reproducing system given in either 9 thru/ or 12.

[Claim 13] It has a memory which memorizes a control code for every display, and recording and playback equipment, and a connection state between each recording and playback equipment, and a display, Claim 1 transmitting a control signal to a display so that a video voice signal from recording and playback equipment which specified playback may be chosen simultaneously with playback and may be displayed with a control signal from recording and a regeneration control device, or recording and a regeneration control device given in 2 or 6.

[Claim 14] A channel selection means to tune in a program, and an image and a voice recording reproduction means which record video information or speech information, . Have a control code which is provided with an identification code setting-out means to set up a self identification code, and is different for every recording and playback equipment. Or two or more recording and playback equipment which can assign a different control code, A display which has at least a display control part which controls a switch based on a control signal from recording and a regeneration control device which won popularity in a receive section which receives a control signal from recording and a regeneration control device, and a receive section, and changes an input of an image and a sound, A data input means which inputs information for recording schedule edit about two or more recording and playback equipment, and reservation of picture recording of a program, A recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on information for recording schedule edit, A transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment, A video voice signal from recording and playback equipment which had a memory which memorizes a control code for every display, and recording and playback equipment, and a connection state between each recording and playback equipment, and a display, and specified playback with a control signal from recording and a regeneration control device, Recording and a reproducing system which makes it possible to comprise recording and a regeneration control device which transmits a control signal to a display so that it may choose simultaneously with playback and may display, and to change a display of a display according to playback of an image from the appointed recording and playback equipment.

[Claim 15] A channel selection means to tune in a program, and an image and a voice recording reproduction means which record video information or speech information, A memory which memorizes a connection state and reservation of picture recording between a control code for every recording and playback equipment, and each recording and playback equipment, Recording and playback equipment which it has in an inside a recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, and can control recording and playback of recording and playback equipment of other slave sides as a master side device.

[Claim 16] characterized by comprising — on the other hand — recording and playback equipment of a slave side — a time check — using recording and playback equipment without a means, a time check of master-side recording and playback equipment — recording and a reproducing system recording by transmitting a control signal to a device of a slave side from a master side if a means performs schedule management of recording and playback of each recording and playback equipment of all the slave sides and it becomes picture recording times A channel selection means to tune in a program.

An image and a voice recording reproduction means which records video information or speech information

A memory which memorizes a connection state and reservation of picture recording between a control code for every recording and playback equipment, and each recording and playback

equipment.

Master-side recording and playback equipment which has in an inside a recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, A reception means which receives a control signal from master-side recording and playback equipment, A channel selection means to tune in a program, and an image and a voice recording reproduction means which record video information or speech information, having an identification code setting-out means to set up a self identification code, receiving a control signal from master-side recording and playback equipment according to an identification code, and comprising recording and playback equipment of a slave side which performs recording and playback in alignment with a recording schedule — master-side recording and playback equipment — a time check — a means.

[Claim 17]Recording and a regeneration control device which is provided with the following, constructs a schedule of recording and playback of two or more recording and playback equipment based on reservation of picture recording, and is characterized by a thing which perform recording and reproduction control of each recording and playback equipment, and which a matrix switch is controlled and is both done for the switchover control of the input and output of a video voice signal.

a time check — a matrix switch which changes input and output of a means and two or more video voice signals.

A schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording.

A control means which controls two or more recording and playback equipment.

A transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment.

[Claim 18]Have the following and a schedule of recording and playback of two or more recording and playback equipment is constructed based on reservation of picture recording, Recording and a regeneration control device which performs recording and reproduction control of each recording and playback equipment and which controls a matrix switch and both carries out switchover control of the input and output of a video voice signal, A channel selection means to tune in a program, and an image and a voice recording reproduction means which record video information or speech information, Two or more recording and playback equipment provided with an identification code setting-out means to set up a self identification code, It has in a component a display which has a display control part which controls a switch based on a control signal from recording and a regeneration control device which won popularity in a receive section which receives a control signal from recording and a regeneration control device, and a receive section, and changes an input of an image and a sound at least, Recording and a reproducing system making timed recording by carrying out switchover control of the input and output of a video voice signal between two or more recording and playback equipment or two or more recording and playback equipment, and a display by a matrix switch of recording and a regeneration control device.

a time check — a matrix switch which changes input and output of a means and two or more video voice signals.

A schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording.

A control means which controls two or more recording and playback equipment.

A transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the recording and playback equipment which makes the timed recording of video information efficiently.

[0002]

[Description of the Prior Art]Conventionally, there is a remote control indicated to JP,5-282736,A as a system which makes timed recording using two or more recording devices. This makes it possible to record continuously, without breaking off an image to two or more magnetic tape about the long form which cannot be recorded on one magnetic tape using two or more recording devices. Hereafter, a conventional example is explained using a drawing. Drawing 19 is a lineblock diagram of the remote control in a conventional example. The specification matter input part which sets up a code for the numerals 1801 to transmit a transmit code only to a specific recording device out of two or more recording devices in drawing 19, As for a control section and 1806, a final controlling element and 1804 are [a transmit code generation part and 1808] transmission sections a storage parts store and 1807 a tape information input part and 1805 the recording ranking input part for which 1802 inputs the recording turn of a recording device, and 1803. First, the specification matter is inputted for every recording device beforehand used from the specification matter input part 1801. In the specification matter input part 1801, the inputted specification matter is memorized to the storage parts store 1806. The turn which a recording device records from the recording ranking input part of 1802 is inputted. In the recording ranking input part 1802, the turn of the recording of the inputted recording device is memorized to the storage parts store 1806. The residue of the magnetic tape inserted in each recording device is inputted as a hour entry by the tape information input part 1804. In the tape information input part 1804, this information is transmitted to a control section. The recording reservation information of the video recording start time of each recording device, recording finish time, a televising channel, etc. is inputted from the final controlling element 1803, and this information is transmitted to a control section in the final controlling element 1803. The recording reservation information of each recording device which read the specification matter and recording ranking for every recording device which were memorized by the storage parts store 1806 in the control section 1805, and was received from this and the final controlling element 1803, The contents of reservation of picture recording over each recording device are determined from the residue of the magnetic tape received from the tape information input part 1804, and information required for the reservation of picture recording to each recording device is transmitted to the transmit code generation part 1807. In the transmit code generation part 1807, each reservation of picture recording and specification matter of a recording device are changed into a transmit code, and it sends to the transmission section 1807. In the transmission section 1807, the received transmit code is made into a predetermined signal system, and it transmits to a recording device. By this, the recording using two or more recording devices of the long form is attained.

[0003]

[Problem(s) to be Solved by the Invention]Anyone records an image easily by the spread of recording and playback equipment, and he can enjoy himself now. Also when using two or more recording devices for the reservation of picture recording of two or more programs, or dubbing, it has come to see mostly. The device of various kinds, such as that to which the recording function of the Hi-Fi (High Fidelity) sound was attached from the thing of BS broadcasting correspondence of recording and playback equipment, and a difference in a recording method, is

provided. In such a situation, when performing reservation of picture recording of two or more programs, with the reservation-of-picture-recording device which human being judges [all] reservation of picture recording of which program should be carried out to which device, and is attached to for every recording and playback equipment. In order to have to reserve a program in a different reservation-of-picture-recording procedure, the problem that time and effort is taken or recording goes wrong is arising. Although it made it possible to record a long form using two or more recording devices in the remote control shown in the conventional example, making full use of two or more recording and playback equipment for the purpose of the relay recording of a long form, recording and playing free and watching two or more programs was not taken into consideration. When processing in which the eliminated place was packed etc. was not completed, and also the contents of recording of two or more sets of recording and playback equipment were checked by monitor or the recorded image was played, the display of the monitor needed to be changed with the help one by one.

[0004] This invention was made in view of the above-mentioned conventional problem, and the 1st purpose is to provide the recording and playback equipment which can make the timed recording of video information efficiently.

[0005] The 2nd purpose of this invention is to provide the recording and playback equipment which can make full use of two or more recording and playback equipment, and can record and play two or more programs free.

[0006] The 3rd purpose of this invention is to provide the recording and playback equipment in which more advanced schedule organization of the edit using the idle time of reservation of picture recording, etc. is possible.

[0007]

[Means for Solving the Problem] In order to solve this technical problem, this invention with a control signal from the outside. [1st] In two or more recording and playback equipment which can perform recording and playback of a program specified as specified time, and recording and a regeneration control device which give directions of recording and playback to those recording and playback equipment with a control signal, An identification code for identifying each recording and playback equipment is assigned to recording and playback equipment, Recording reservation information including a recording channel into which recording and a regeneration control device were inputted from these identification codes and operation input sections, and picture recording times, And a model of each recording and playback equipment, a function, performance, existence of wearing of recording media, Recorded time of time [of recording media with which it is equipped / which can be recorded] or capacity, and recording media with which it is equipped, or capacity, Non-picture recording times of recording media with which it is equipped or capacity, a kind of recording media with which it is equipped, Have a memory which memorizes information for recording schedule organization of a connection state between recording and playback equipment, a connection state between recording and playback equipment, and a display, etc., and an operation input section which receives an input of these information, cancellation of a request to print out files, and elimination, and by a recording schedule management section. Schedule organization of assignment to each recording and playback equipment of recording of a program reserved based on information on a memory is performed, and the timed recording of a desired program is made by transmitting a control signal containing an identification code of each recording and playback equipment to each recording and playback equipment.

[0008] In the 2nd, a means of communication which can communicate both directions [said recording and playback equipment and / recording and a regeneration control device] respectively is provided, When recording and playback equipment return information for recording schedule organization of existence of tape wearing, residual time information, etc. to recording and a regeneration control device, The timed recording of a desired program is made by performing schedule control of recording of each program by the recording and regeneration control device side based on these information, without applying time and effort of an input.

[0009] Two or more recording and playback equipment which can perform recording and playback of a program specified [3rd] as specified time with a control signal from the outside, In recording and a regeneration control device which gives directions of recording and playback to those recording and playback equipment with a control signal, An identification code for identifying each recording and playback equipment is assigned to recording and playback equipment, A memory which memorizes information for recording schedule organization of reservation of picture recording of a program as which recording and a regeneration control

device were inputted from a connection state and an operation input section between these identification codes, and each recording and playback equipment to record, etc., Have an operation input section which receives cancellation of a request to print out files of a program, or a request to print out files and elimination to record, and by a recording schedule management section. Recording for every apparatus for dubbing compilation in consideration of assignment to each recording and playback equipment of recording of a program, an empty condition of each media, idle time of reservation of picture recording, etc. which were reserved based on information on a memory, etc., The timed recording of a desired program is made by transmitting a control signal which performs playback and schedule organization of elimination and contains an identification code of each recording and playback equipment to recording and the playback equipment concerned.

[0010]Recording and playback equipment which performs recording and playback of an image and a sound to the 4th in response to a control signal from recording and a regeneration control device, A display which changes an input of an image and a sound based on a control signal from recording and a regeneration control device, By providing a system which controls a display to choose a video voice signal from recording and playback equipment which constituted recording and a reproducing system from recording and a regeneration control device, and was chosen by a control signal from recording and a regeneration control device. It enables it to perform recording and playback, without changing a display manually one by one.

[0011]In addition to composition shown in the 5th by the 3rd solving means, a means of communication which can communicate both directions [recording, playback equipment, and / recording and a regeneration control device] respectively is provided, It is made to perform schedule control of recording of each program based on these information by returning existence of a tape of recording and playback equipment, and residual time information to recording and a regeneration control device by the recording and regeneration control device side.

[0012]To the 6th, master-side recording and regeneration control device manage picture recording times of recording and playback equipment of all the slave sides, making it record on recording and playback equipment from a master side by transmitting a recording control signal to a device of a slave side, if it becomes picture recording times — a time check of recording and playback equipment of a slave side — a means is made unnecessary, two or more cheap devices are connected, and recording of many programs is enabled.

[0013]By carrying out switchover control of the input and output of a video voice signal between two or more recording and playback equipment, and a display to the 7th by a matrix switcher, It makes it possible to perform playback and a display, and dubbing of a video voice signal between the appointed devices, without increasing an input/output terminal of each recording and playback equipment, and a display.

[0014]

[Embodiment of the Invention]The data input means as which the invention of this invention according to claim 1 inputs the information for the recording schedule edit about two or more recording and playback equipment, and the reservation of picture recording of a program into recording and a regeneration control device, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on the information for recording schedule edit, It has a transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment, and has the operation that the timed recording of video information can be made efficiently, by managing a recording schedule.

[0015]In recording and the regeneration control device according to claim 1 the invention of this invention according to claim 2, The information for recording schedule organization The model of recording and playback equipment, the function of recording and playback equipment, Time which can be recorded or capacity of the performance of recording and playback equipment, the existence of wearing of recording media, and the recording media with which it is equipped, Non-picture recording times or capacity of the recorded time of the recording media with which it is equipped or capacity, and the recording media with which it is equipped, Recording reservation information including the kind, the recording channel, and picture recording times of the recording media with which it is equipped, By making it be any one or more of the connection state between recording and playback equipment, and the connection states between recording and playback equipment, and a display, and synthesizing information, including the model of recording and playback equipment, the situation of performance and the media with which it

equips, etc., It has the operation that scheduling of finer reservation of picture recording can be performed.

[0016]The reception means to which the invention of this invention according to claim 3 receives the control signal from recording and a regeneration control device to recording and playback equipment, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, It has an identification code setting-out means to set up a self identification code, the control signal from recording and a regeneration control device is received according to an identification code, and it has the operation that recording and playback in alignment with a recording schedule can be performed.

[0017]The data input means as which the invention of this invention according to claim 4 inputs the information for recording schedule edit concerning two or more recording and playback equipment in recording and a reproducing system, and the reservation of picture recording of a program, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on the information for recording schedule edit, The reception means which receives the control signal from the recording and the regeneration control device which has a transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment, and recording and a regeneration control device, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, Have an identification code setting-out means to set up a self identification code, and the control signal from recording and a regeneration control device is received according to an identification code, The recording and playback equipment which performs recording and playback in alignment with a recording schedule constitute, While recording and a regeneration control device perform organization and management activities of a recording schedule, recording and playback equipment can perform recording and reproduction motion, and it has the operation that the timed recording of video information can be made efficiently, by managing a recording schedule.

[0018]In recording and the reproducing system according to claim 4 the invention of this invention according to claim 5, As for recording and playback equipment, two or more sets are connected to one set of recording and a regeneration control device, and one set of said recording and regeneration control device is made to carry out individual control of two or more sets of said recording and playback equipment using an identification code, It has the operation that a system can be made briefer and the timed recording of video information can be made efficiently.

[0019]In recording and the regeneration control device according to claim 1 or 2 the invention of this invention according to claim 6, Provide the means of communication in which bidirectional communication is possible, and by the control code corresponding to each recording and playback equipment, to each recording and playback equipment, while being ability ready for sending, a control signal, By carrying out as [receive / from recording and playback equipment / the information for recording schedule organization], and providing the means of communication in which bidirectional communication is possible, Information, including the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, etc., can be exchanged automatically, and it has the operation that user-friendliness is improved substantially.

[0020]While the invention of this invention according to claim 7 possesses the means of communication in which bidirectional communication is possible and receives the control signal from recording and a regeneration control device in recording and the playback equipment according to claim 3, It carries out as [transmit / the information for recording schedule organization], information, including the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, etc., can be automatically exchanged by bidirectional communication, and it has the operation that user-friendliness is improved substantially.

[0021]In recording and the playback equipment according to claim 7 the invention of this invention according to claim 8, The information for recording schedule organization The model of recording and playback equipment, the function of recording and playback equipment, Time which can be recorded or capacity of the performance of recording and playback equipment, the existence of wearing of recording media, and the recording media with which it is equipped, Non-picture recording times or capacity of the recorded time of the recording media with which it is

equipped or capacity, and the recording media with which it is equipped, Recording reservation information including the kind, the recording channel, and picture recording times of the recording media with which it is equipped, By making it be any one or more of the connection state between recording and playback equipment, and the connection states between recording and playback equipment, and a display, and synthesizing information, including the model of recording and playback equipment, the situation of performance and the media with which it equips, etc., It has the operation that scheduling of finer reservation of picture recording can be performed.

[0022]The data input means as which the invention of this invention according to claim 9 inputs the information for the recording schedule edit about two or more recording and playback equipment, and the reservation of picture recording of a program in recording and a reproducing system, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on the information for recording schedule edit, By the control code corresponding to each recording and playback equipment, to each recording and playback equipment, while being ability ready for sending, a control signal, While receiving the control signal from [from recording and playback equipment] the recording and the regeneration control device which has a means of communication in which the bidirectional communication which is ability ready for receiving about the information for recording schedule organization is possible, and recording and a regeneration control device, The means of communication in which the bidirectional communication which is ability ready for sending about the information for recording schedule organization is possible, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, Have an identification code setting-out means to set up a self identification code, receive the control signal from recording and a regeneration control device according to an identification code, and the recording and playback equipment which performs recording and playback in alignment with a recording schedule constitute, While recording and a regeneration control device perform organization and management activities of a recording schedule, recording and playback equipment can perform recording and reproduction motion, and it has the operation that the timed recording of video information can be made efficiently, by managing a recording schedule.

[0023]In recording and the reproducing system according to claim 9 the invention of this invention according to claim 10, As for recording and playback equipment, two or more sets are connected to one set of recording and a regeneration control device, and one set of said recording and regeneration control device is made to carry out individual control of two or more sets of said recording and playback equipment using an identification code, It has the operation that operation of reservation of picture recording can be performed the optimal according to the performance of each recording and playback equipment, and a situation.

[0024]. The invention of this invention according to claim 11 has a control code which is different for every recording and playback equipment as for two or more recording and playback equipment in recording and the reproducing system according to claim 5 or 10. Or it carries out as [be / assigning a different control code / possible], and has the operation that a complicated reservation-of-picture-recording schedule is manageable.

[0025]In claim 4 or 5, or recording and a reproducing system given in either 9 thru/or 12 the invention of this invention according to claim 12, The information for recording schedule organization The model of recording and playback equipment, the function of recording and playback equipment, Time which can be recorded or capacity of the performance of recording and playback equipment, the existence of wearing of recording media, and the recording media with which it is equipped, Non-picture recording times or capacity of the recorded time of the recording media with which it is equipped or capacity, and the recording media with which it is equipped, Recording reservation information including the kind, the recording channel, and picture recording times of the recording media with which it is equipped, By making it be any one or more of the connection state between recording and playback equipment, and the connection states between recording and playback equipment, and a display, and synthesizing information, including the model of recording and playback equipment, the situation of performance and the media with which it equips, etc., It has the operation that scheduling of finer reservation of picture recording can be performed.

[0026]In claim 1, or recording and a regeneration control device given in 2 or 6 the invention of this invention according to claim 13, It has a memory which memorizes the control code for every display, and recording and playback equipment, and the connection state between each

recording and playback equipment, and a display, The video voice signal from the recording and playback equipment which specified playback with the control signal from recording and a regeneration control device, A control signal is transmitted to a display so that it may choose simultaneously with reproduction and may display, and it has the operation that it cuts that a user gets to know the contents of the reproduction program further by regeneration.

[0027]A channel selection means by which the invention of this invention according to claim 14 tunes in a program for recording and a reproducing system, . Have a control code which is provided with the image and voice recording reproduction means which records video information or speech information, and an identification code setting-out means to set up a self identification code, and is different for every recording and playback equipment. Or two or more recording and playback equipment which can assign a different control code, A display which has at least a display control part which controls a switch based on the control signal from the recording and the regeneration control device which won popularity in the receive section which receives the control signal from recording and a regeneration control device, and the receive section, and changes the input of an image and a sound, The data input means which inputs the information for the recording schedule edit about two or more recording and playback equipment, and the reservation of picture recording of a program, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on the information for recording schedule edit, It has a transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment, and a memory which memorizes the control code for every display, and recording and playback equipment, and the connection state between each recording and playback equipment, and a display, The video voice signal from the recording and playback equipment which specified playback with the control signal from recording and a regeneration control device, It constitutes from recording and a regeneration control device which transmits a control signal to a display so that it may choose simultaneously with playback and may display, and it has the operation that the display of a display can be changed according to playback of the image from the appointed recording and playback equipment, without changing a display manually one by one.

[0028]A channel selection means by which the invention of this invention according to claim 15 tunes in a program to recording and playback equipment, The image and voice recording reproduction means which records video information or speech information, and the memory which memorizes the connection state and reservation of picture recording between the control code for every recording and playback equipment, and each recording and playback equipment, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording is given to an inside, and it has the operation of making it possible to control the recording and playback of the recording and playback equipment of other slave sides as a master side device.

[0029]A channel selection means by which the invention of this invention according to claim 16 tunes in a program for recording and a reproducing system, The image and voice recording reproduction means which records video information or speech information, and the memory which memorizes the connection state and reservation of picture recording between the control code for every recording and playback equipment, and each recording and playback equipment, Master-side recording and playback equipment which has in an inside a recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, The reception means which receives the control signal from master-side recording and playback equipment, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, Have an identification code setting-out means to set up a self identification code, and the control signal from master-side recording and playback equipment is received according to an identification code, It constitutes from recording and playback equipment of the slave side which performs recording and playback in alignment with a recording schedule, master-side recording and playback equipment — a time check — while it has a means — the recording and playback equipment of a slave side — a time check — using recording and playback equipment without a means — the time check of master-side recording and playback equipment — by a means by performing schedule management of the recording and playback of each recording and playback equipment of all the slave sides. When it becomes picture recording times, it has the operation that it is possible to record by transmitting a control signal to the device of a slave side from a master side.

[0030]the invention of this invention according to claim 17 — recording and a regeneration control device — a time check — with the matrix switch which changes input and output of a means and two or more video voice signals. The schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, It has a control means which controls two or more recording and playback equipment, and a transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment, By [which construct the schedule of the recording and playback of two or more recording and playback equipment based on reservation of picture recording, and performs recording and reproduction control of each recording and playback equipment] both controlling a matrix switch, It has the operation of making it possible to carry out switchover control of the input and output of a video voice signal, without increasing the input/output terminal of each recording and playback equipment, and a display.

[0031]the invention of this invention according to claim 18 — recording and a reproducing system — a time check — with the matrix switch which changes input and output of a means and two or more video voice signals. The schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, The control means which controls two or more recording and playback equipment, and the transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment are provided, Based on reservation of picture recording, the schedule of the recording and playback of two or more recording and playback equipment is constructed, Recording and a regeneration control device which performs recording and reproduction control of each recording and playback equipment and which controls a matrix switch and both carries out switchover control of the input and output of a video voice signal, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, Two or more recording and playback equipment provided with an identification code setting-out means to set up a self identification code, It has at least a display which has a display control part which controls a switch based on the control signal from the recording and the regeneration control device which won popularity in the receive section which receives the control signal from recording and a regeneration control device, and the receive section, and changes the input of an image and a sound, It has the operation that timed recording can be made by carrying out switchover control of the input and output of the video voice signal between two or more recording and playback equipment or two or more recording and playback equipment, and a display by the matrix switch of recording and a regeneration control device.

[0032]Hereafter, an embodiment of the invention is described using drawing 18 from drawing 1.

[0033](Embodiment 1) Recording and a regeneration control device, and recording and playback equipment, [in / in drawing 1 / a 1st embodiment of this invention] The block diagram showing the connecting relation of a display, the block diagram showing the detailed composition of recording and a regeneration control device, [in / in drawing 2 / a 1st embodiment of this invention] The block diagram and drawing 4 in which the detailed composition of recording and playback equipment is shown are a block diagram showing the detailed composition of the display in a 1st embodiment of this invention. [in / in drawing 3 / a 1st embodiment of this invention] In drawing 1, a distributor, and 102-104 the numerals 101 Recording and playback equipment, In a controlling signal line and drawing 2 the video voice signal line by which 105 pours recording and a regeneration control device, and, as for 106, a display, 110-113, and 118-120 pass a video voice signal, and 114-117, the numerals 105 — 204 setting a recording schedule management section and 203 to an operation input section, being set to an indicator, and recording and a regeneration control device, and 201 setting 211-213 to a signal wire and drawing 3, and a transmission section and 202, The numerals 301 recording and playback equipment, and 302 an identification code setting-out means and 303 A receive section, 304 — a tuner and 305 — an appliance control part and 306 — a time check — a means and 307 — an image and a voice recording regenerating section. 308 a switch and 309 a character generation part and 310 A video voice signal line, 315, 320, and 323 set 311-314, and 317-319 to a controlling signal line, set them on an audio signal line, and 316, 321, 322, and 324 are set to a video signal line and drawing 4, The numerals 106 a display and 401 an identification code setting-out means and 402 A receive section, As for 403, a character generation part and 406 a switch and 407 an image display, and 410, 414-417, 420 and 422 a voice output part and 405 for a display control part and 404 A controlling signal line, 411 to 413 image, and an audio signal line, 418 expresses 419 and an

audio signal line and 421 express a video signal line.

[0034]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. Drawing 1 has shown the case where timed recording is made using three sets of recording and playback equipment. Operation of timed recording is first explained briefly using drawing 1.

[0035]The video signal 110 (generally, although it is a video signal, an audio signal, and the signal with which multiplex [of the data] was carried out, since it is easy here, it will be called a video signal) received with CATV or the antenna is distributed by the distributor 101, and is inputted into each recording and playback equipment via the signal wires 111-113. In recording and the regeneration control device 105, an input of the information about other each recording and playback equipment of information required for reservation of picture recording will adjust the schedule of the reservation of picture recording of each recording and playback equipment automatically. After checking a schedule control result, recording reservation data is transmitted to each recording and playback equipment via the signal wires 114-116. The video signal from the recording and playback equipment which sends directions of the switchover control of the display to the display 106 via the signal wire 117, and corresponds the reservation-of-picture-recording situation at this time out of the video signals 118-120 can be chosen, and an image can be displayed and checked. These signal wires 114-117 are virtual, and may use the radio by infrared light etc. actually. In recording and the playback equipment 102-104, the image and sound of the channel specified that the start time of the reserved program comes are recorded.

[0036]Here, operation of recording and a regeneration control device is explained in more detail using drawing 2. Operation of the recording and playback equipment at this time is explained using drawing 3. First, the identification code received from the identification code setting-out means 302 via the signal wire 422 when the control information 325 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the receive section 303 is checked. If it judges that the received control information allots self, the contents will be passed to the appliance control part 305 via the signal wire 312. Here, when recording and playback equipment are plurality, in order to send control information only to a specific device, the code for [with other devices] identifying is beforehand set up by the identification code setting-out means 302. In this case, setting out also with the same recording and regeneration control device side is performed. Setting out of an identification code is performed by selection from a DIP switch or a menu screen. In the appliance control part 305, when an incoming message is a reservation-of-picture-recording demand, recording reservation data etc. are sent to the character generation part 309 via the signal wire 319. In the character generation part 309, the received text is changed into a video signal and it outputs to the video signal line 322.

[0037]Based on the control information received from recording and a regeneration control device, directions of a change of the switch 308 are taken out with the appliance control part 305 via the signal wire 318. This outputs that to which the video signal 321 outputted from the video signal 322, or the image and the voice recording regenerating section 307 outputted from the character generation part 309 and the audio signal 320 inner-correspond to the video signal line 324 and the audio signal line 323 with the switch 308. furthermore — passing the signal wire 313 in the appliance control part 305 — a time check — a recording start and finish time are set as the means 306. a time check — by the means 306, time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time, and it is notified to an appliance control part via the signal wire 313 that a difference is set to 0. If recording directions will be sent to an image and the voice recording regenerating section 307 via the signal wire 317 if the notice of video recording start time comes, and the notice of recording finish time comes by the appliance control part 305, directions of a stop will be sent to an image and the voice recording regenerating section 307 via the signal wire 317. In the case of recording, directions of setting out of the channel specified from the appliance control part 305 to the tuner 304 via the signal wire 314 are sent. Based on this, by the tuner 304, the image of the channel of inner specification of the video signal from the video signal line 310 is separated, and a video signal and an audio signal are outputted to the video signal line 316 and the audio signal line 315, respectively.

[0038]Operation of the display at this time is explained using drawing 4. In the display 106, the identification code for discernment of a device is beforehand set up by the identification code setting-out means 401 like recording and playback equipment. The identification code received

from the identification code setting-out means 401 via the signal wire 422 when the control information 410 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the receive section 402 is checked, If it judges that the received control information allots self, the contents will be passed to the display control part 414 via the signal wire 414. Based on the control information from recording and a regeneration control device, directions of a change are taken out with the display control part 414 to the switch 406 via the signal wire 415, This outputs that to which the video signal 421 from the character generation part 405 or the video voice signals 411-413 from each recording and playback equipment inner-correspond to the video signal line 419 and the audio signal line 418 with the switch 406. In the image display 407, the image of the video signal line 419 is displayed on a monitor, and a reproducing output is carried out [sound / of the audio signal line 418] in the voice output part 404.

[0039](Embodiment 2) The figure and drawing 6 in which the composition of recording and a regeneration control device is shown are a figure showing the composition of the recording and playback equipment in a 2nd embodiment of this invention. [in / in drawing 5 / a 2nd embodiment of this invention] The connecting relation of the recording and the regeneration control device in a 2nd embodiment of this invention, recording and playback equipment, and a display is the same as that of drawing 1 of a 1st embodiment of this invention, and is the same as that of drawing 4 of a 1st embodiment also about the composition of a display. About the composition of recording and a regeneration control device. If it removes that the transmission section 201 of drawing 2 is the transmission and reception section 501 in drawing 5, it is the same as that of a 1st embodiment, and about the composition of recording and playback equipment, if it removes that the receive section 303 of drawing 3 is the transmission and reception section 603 in drawing 6, it is the same as that of a 1st embodiment. Drawing 7 is a figure showing the exchange of the control information between the recording and the regeneration control device, and each recording and playback equipment in a 2nd embodiment of this invention. 501 of drawing 5 a transmission and reception section and 502 a recording schedule management section and 503 An operation input section, 504 an indicator, and 511-513 601 of a signal wire and drawing 6 Recording and playback equipment, 602 an identification code setting-out means and 603 a receive section and 604 A tuner, 605 — an appliance control part and 606 — a time check — a means and 607 — an image and a voice recording regenerating section. 608 — a switch and 609 — a character generation part and 6001, as for a media classification primary detecting element and 610, a video voice signal line, 611-614, and 617-619 and 631 express a controlling signal line, 615, 620, and 623 express an audio signal line, and 616, 621, 622, and 624 express a video signal line.

[0040]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. Drawing 1 has shown the case where timed recording is made using three sets of recording and playback equipment. By this embodiment, except having a transmitting function, respectively, each recording and playback equipment 102-104, and recording and a regeneration control device 105 are the same as that of drawing 1, and are especially explained in detail here using drawing 5, drawing 6, and drawing 7 about the portion about an exchange of a bidirectional signal. In the recording and the regeneration control device of drawing 5, the data of the number of the recording and playback equipment to be used, etc. besides the data of a channel and start time required for the reservation of picture recording of a program to carry out reservation of picture recording according to the display of the indicator 504 from the operation input section 503, finish time, the image quality in the case of recording, etc. is inputted. The model of each recording and playback equipment, a function, performance, the existence of wearing of recording media, The recorded time of the time [of the recording media with which it is equipped / which can be recorded] or capacity, and recording media with which it is equipped, or capacity, The non-picture recording times of the recording media with which it is equipped or capacity, the kind of recording media with which it is equipped, Taking advantage of a two-way communication function, via the transmission and reception section 501, it asks each recording and playback equipment one by one, and acquires about the information for recording schedule organization of the connection state between recording reservation information including a recording channel and picture recording times, and recording and playback equipment, the connection state between recording and playback equipment, and a display, etc.

[0041]When setting up an identification code by the identification code setting-out means of the device of a transmission destination, the identification code corresponding to the identification

code set up for every device is set up. These inputted data is memorized by the memory and used for scheduling in the recording schedule management section 502. The control code of each recording and playback equipment is beforehand registered into the memory, and the control code of a beforehand corresponding device is specified as it by an operation input section again. In the recording schedule management section 502, a picture recording program and recording mode are assigned for every device from the length of the reserved program, a time zone, the image quality of recording, the kind of tape of each recording and playback equipment, the residue that can be recorded, etc. The result assigned by the recording schedule management section 502 is checked by the display of the indicator 504, or the display of a display, and necessary information will be corrected if correction is required. If the check of the contents of reservation of picture recording is received by the operation input section 503, it will be notified to the recording schedule management section 502 via the signal wire 513. The recording reservation data for every recording and playback equipment determined in the recording schedule management section 502 is sent to the transmission and reception section 501 via the signal wire 511, and the control code for every recording and playback equipment is transmitted to recording and playback equipment in the transmission and reception section 501. In order to avoid the erroneous reception of the code between the same models, when the identification code of the device is set up, the identification code is attached and it is transmitted.

[0042] Operation of the recording and playback equipment at this time is explained using drawing 6. The identification code received from the identification code setting-out means 602 via the signal wire 622 when the control information 625 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the transmission and reception section 603 is checked. If it judges that the received control information allots self, the contents will be passed to the appliance control part 605 via the signal wire 612. Here, when recording and playback equipment are plurality, in order to send control information only to a specific device, the code for [with other devices] identifying is beforehand set up by the identification code setting-out means 602. In this case, setting out also with the same recording and regeneration control device side is performed. Setting out of an identification code is performed by selection from a DIP switch or a menu screen. When an incoming message is an inquiry (device information-requirements message) of the information by the side of recording and playback equipment in the appliance control part 605, The information on the kind of tape with which it has equipped now which was received from the media classification primary detecting element 6001 via the signal wire 631. The transmission and reception section 603 is passed via the signal wire 612 by making into a device information notification message the information by the side of recording and playback equipment, such as a reservation-of-picture-recording situation currently held in the memory in the residue of the tape received from the image and the voice recording regenerating section 607 via the signal wire 617 which can be recorded, and the appliance control part 605. The transmission and reception section 603 sends this to the recording and regeneration control device side, and notifies it.

[0043] In the appliance control part 605, when an incoming message is a reservation-of-picture-recording demand, while holding recording reservation data etc. to an internal memory, it sends to the character generation part 609 via the signal wire 619. In the character generation part 609, the received text is changed into a video signal and it outputs to the video signal line 622. Based on the control information from recording and a regeneration control device, directions of a change of the switch 608 are taken out with the appliance control part 605 via the signal wire 618. This outputs that to which the video signal 621 outputted from the video signal 622, or the image and the voice recording regenerating section 607 outputted from the character generation part 609 and the audio signal 620 inner-correspond to the video signal line 624 and the audio signal line 623 with the switch 608. furthermore — passing the signal wire 613 in the appliance control part 605 — a time check — a recording start and finish time are set as the means 606. a time check — by the means 606, time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time, and it is notified to the appliance control part 605 via the signal wire 613 that a difference is set to 0. If recording directions will be sent to an image and the voice recording regenerating section 607 via the signal wire 617 if the notice of video recording start time is received, and the notice of recording finish time comes by the appliance control part 605, directions of a stop will be sent to an image and the voice recording regenerating section 607 via

the signal wire 617. In the case of recording, directions of setting out of the channel specified from the appliance control part 605 to the tuner 604 via the signal wire 614 are sent. Based on this, by the tuner 604, the image of the channel of inner specification of the video signal from the video signal line 610 is separated, and a video signal and an audio signal are outputted to the video signal line 616 and the audio signal line 615, respectively.

[0044] Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0045] Here, the message transmitted and received using drawing 7 between recording and a regeneration control device, and each recording and playback equipment is explained. Drawing 7 shows the example of the sent received message in case device identification code ID1 - ID3 are set up to recording and the playback equipment 1-3, respectively. In this case, recording and a regeneration control device ask information required for the scheduling of the reservation of picture recording of the program which transmits a device information-requirements message (the field in () is a device identification code) to each recording and playback equipment, and is assigned to each device, when new reservation of picture recording occurs. Each recording and playback equipment record and transmit [regeneration control device] a device information notification message (the fields in () are a device identification code and device information to order), and notifies the information by the side of recording and playback equipment, such as a kind of tape with which it has equipped now, a residue of a tape which can be recorded, and a reservation-of-picture-recording situation. The time and effort which a user inputs into recording and a regeneration control device by this can be saved. Based on these information, recording and a regeneration control device construct the schedule of reservation of picture recording, and transmits a reservation-of-picture-recording request message to each recording and playback equipment. Each field in () of a reservation-of-picture-recording request message expresses a device identification code, a channel, recording start time, recording end time, and recording mode, respectively. That is, by the reservation-of-picture-recording demand (ID1, TV1, TS1, TS2, N) message from recording and a regeneration control device, it is being required that one TV of terrestrial broadcasting should be recorded by recording mode: Normal (N) to recording and the playback equipment 1 from time TS of opening day 1 to time Te of end date 1. On the other hand, the notification message which checks having received reservation of picture recording from recording and the playback equipment 1 is returned. A reservation-of-picture-recording request message is transmitted to recording and the playback equipment 2 and 3 like the following, and the reservation-of-picture-recording reception message which checks having received reservation of picture recording from each device is returned. A check is performed by returning a reservation-of-picture-recording change reception message to a reservation-of-picture-recording change-request message similarly to change a request to print out files on the way. Thus, by incorporating a bidirectional communication function between recording and a regeneration control device, and recording and playback equipment, For example, the case where recording and playback equipment break down and a reservation-of-picture-recording reception message does not come on the contrary, In the notice of a recording end not coming on the contrary, even if recording end time passes etc., re-scheduling processing of changing hurriedly the reservation of picture recording which was being assigned to the device to another recording and playback equipment is performed, and failure to recording can be avoided.

[0046] (Embodiment 3) The figure showing the composition of recording and playback equipment, [in / in drawing 8 / a 3rd embodiment of this invention] The figure and drawing 11 in which the connecting relation of recording and a regeneration control device, recording and playback equipment, and a display is shown are a figure for explaining the schedule of the recording and playback in a 3rd embodiment of this invention. [in / in drawing 9 / a 3rd embodiment of this invention] It is the same as that of the figure showing the composition of the recording and the regeneration control device of drawing 2 in a 1st embodiment of this invention about the internal configuration of the recording and the regeneration control device 805 in drawing 9. About the internal configuration of the display 806 in drawing 9, it is the same as that of the figure showing the composition of the display of drawing 4 in a 1st embodiment of this invention. 801 of drawing 9 a distributor, and 802-804 recording and playback equipment, and 805 Recording and a regeneration control device, The video voice signal line by which a display, 810-813, and 817-825 pass a video voice signal 806, 701 of a controlling signal line and drawing 8 814-817, and 826 Recording and playback equipment, 702 an identification code setting-out means and 703 a receive section and 704 A tuner, 705 — an appliance control part and 706 — a time check — a means and 707 — an image and a voice recording regenerating section. 708 — a switch and 709,

a video voice signal line, 711-714, and 717-719 and 732 express a controlling signal line, 715, 720, and 723 express an audio signal line, and, as for a character generation part, 710, and 726-730, 716, 721, 722, and 724 express a video signal line.

[0047]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. At drawing 9, each recording and playback equipment 802-804, and the display 806 shall have only a receiving function by this embodiment with the figure showing the composition in the case of making timed recording by cooperating mutually using three sets of recording and playback equipment. The operation is first explained briefly using drawing 9. The video signal 810 received with CATV or the antenna is distributed by the distributor 801, and is inputted into each recording and playback equipment via the signal wires 811-813. In recording and the regeneration control device 805, an input of the information about other each recording and playback equipment of information required for reservation of picture recording will adjust the schedule of the reservation of picture recording of each recording and playback equipment automatically. After checking a schedule control result, recording reservation data is transmitted to each recording and playback equipment via the signal wires 814-816. The video signal from the recording and playback equipment which sends directions of the switchover control of the display to the display 806 via the signal wire 826, and corresponds the reservation-of-picture-recording situation at this time out of the video signals 819, 822, and 825 can be chosen, and an image can be displayed and checked. These signal wires 819, 822, and 825 are virtual, and may use the radio by infrared light etc. actually. In recording and the playback equipment 802-804, the recording of the image and sound of the channel specified that the start time of the reserved program comes is started.

[0048]Since the image and voice response of each recording and playback equipment are connected by the input terminal of two sets of other recording and playback equipment as shown in a figure, it is possible to make the copy of an image and a sound between two sets of arbitrary recording and playback equipment. By the case where he would like to record on the same tape, the programs (serial drama etc.) eventually broadcast in the same series using this function. It records with the recording and playback equipment which has recording and the regeneration control device 805 temporarily, a schedule is constructed so that it may copy again to the target recording and playback equipment at vacant time, input and output of the image and sound of each recording and playback equipment are controlled, and it carries out to edit automatically.

[0049]Here, it explains in more detail about operation of recording and a regeneration control device. Since it is the same as that of the figure showing the composition of the recording and the regeneration control device of drawing 2 about the internal configuration of the recording and the regeneration control device 805 in drawing 9, it explains using drawing 2. The operation input section 203 in the recording and the regeneration control device of drawing 2 Power turn OFF, The button for control of recording and playback equipment, such as recording, playback, and a stop, the change of a monitor display, The ten key for specifying the button, the program, and reservation-of-picture-recording time for specification of recording and playback equipment, etc. are comprised, According to the display of the indicator 204, the model of each recording and playback equipment, a function, performance, Time which can be recorded or capacity of the existence of wearing of recording media, and the recording media with which it is equipped, Non-picture recording times or capacity of the recorded time of the recording media with which it is equipped or capacity, and the recording media with which it is equipped, The information for recording schedule organization of the connection state between recording reservation information including the kind, the recording channel, and picture recording times of the recording media with which it is equipped, and recording and playback equipment, the connection state between recording and playback equipment, and a display, the image quality in the case of recording, etc. is inputted. When setting up an identification code by the identification code setting-out means of the device of a transmission destination, the identification code corresponding to the identification code set up for every device is set up. These inputted data is memorized by the memory and used for scheduling in the recording schedule management section 202.

[0050]The control code of each recording and playback equipment is beforehand registered into the memory, and the control code of a beforehand corresponding device is specified as it by an operation input section again. It specifies by the operation input section beforehand also about the connection state between each recording and playback equipment. In the recording schedule management section 202, a picture recording program and recording mode are assigned for every

device from the length of the reserved program, a time zone, the image quality of recording, the kind of tape of each recording and playback equipment, the residue that can be recorded, etc. The result assigned by the recording schedule management section 202 is checked by the display of the indicator 204, or the display of a display, and necessary information will be corrected if correction is required. If the check of the contents of reservation of picture recording is received by the operation input section 203, it will be notified to the recording schedule management section 202 via the signal wire 213. The recording reservation data for every recording and playback equipment determined in the recording schedule management section 202 is sent to the transmission section 201 via the signal wire 211, and the control code for every recording and playback equipment is transmitted to recording and playback equipment in the transmission section 201. In order to avoid the erroneous reception of the code between the same models, when the identification code of the device is set up, the identification code is attached and it is transmitted.

[0051] Operation of the recording and playback equipment at this time is explained using drawing 8. The identification code received from the identification code setting-out means 702 via the signal wire 722 when the control information 725 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the receive section 703 is checked. If it judges that the received control information allots self, the contents will be passed to the appliance control part 705 via the signal wire 712. Here, when recording and playback equipment are plurality, in order to send control information only to a specific device, the code for [with other devices] identifying is beforehand set up by the identification code setting-out means 702. In this case, setting out also with the same recording and regeneration control device side is performed. Setting out of an identification code is performed by selection from a DIP switch or a menu screen.

[0052] In the appliance control part 705, when an incoming message is a reservation-of-picture-recording demand, while holding recording reservation data etc. to an internal memory, it sends to the character generation part 709 via the signal wire 719. In the character generation part 709, the received text is changed into a video signal and it outputs to the video signal line 722.

[0053] Based on the control information and the recording schedule from recording and a regeneration control device, directions of a change of the switch 708 are taken out with the appliance control part 705 via the signal wire 718. This outputs that to which the video signal 724 outputted from the video signal 722, or the image and the voice recording regenerating section 707 outputted from the character generation part 709 and the audio signal 723 inner-correspond with the switch 708 to the video voice signal line by which the video voice signal lines 728-730 correspond either.

[0054] furthermore — passing the signal wire 713 in the appliance control part 705 — a time check — it starts [recording start, finish time, or reproduction] for the means 706, and finish time is set as it. a time check — by the means 706, time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time, and it is notified to the appliance control part 705 via the signal wire 713 that a difference is set to 0. If the notice of video recording start time is received, will take out directions of a change on the switch 700 with the appliance control part 705 via the signal wire 732, and with the switch 700 with directions of this change. Based on a recording schedule, any 1 set in the video signal 716 and the audio signal 715 from the tuner 704, or the video voice signals 726 and 727 from two sets of other recording and playback equipment is chosen, and it outputs to the video signal line 721 and the audio signal line 720. If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 707 via the signal wire 717 in the appliance control part 705 and the notice of recording finish time comes, directions of a stop will be sent to an image and the voice recording regenerating section 707 via the signal wire 717. When a reproduction start notice and a reproduction terminating notice are received, reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 707 via the signal wire 717, respectively. In an image and the voice recording regenerating section 707, if recording directions are received, the recording of the image and sound of the video signal line 721 and the audio signal line 720 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 707, when reproductive directions are received from the appliance control part 705 via the signal wire 717, the head is pulled out by rewinding or sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When recording by being interlocked with other recording and playback

equipment, it cannot be overemphasized that the accuracy of recording can be raised by performing control of a common synchronized signal and a time code.

[0055]In the case of the program recording from the tuner 704, the object of recording sends directions of setting out of the channel specified to the tuner 704 via the signal wire 714 in the appliance control part 705, Based on this, by the tuner 704, the image of the channel of inner specification of the video signal from the video signal line 710 is separated, and a video signal and an audio signal are outputted to the video signal line 716 and the audio signal line 715, respectively. Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0056]Here, the example of the method of the scheduling of the reservation of picture recording which uses three sets of recording and playback equipment using drawing 11 is explained. The relation between the channel which is broadcasting the program and it which carry out reservation of picture recording, and a broadcasting-hours belt is shown in the upper part of drawing 11. It is the programs (serial drama etc.) of the same series which has waved [of (1) - (7)] to the program which carries out reservation of picture recording for convenience, and performed the same hatching. (5) is expressed in this example as (1) - (3) and (4). Recording and the playback equipment 1-3 shall be equipped with the tape of the same capacity. When the program which carries out reservation of picture recording has such a relation, in the recording schedule management section 502, the reservation of picture recording of the program of (1) is first assigned to recording and the playback equipment 1, and reservation of picture recording is assigned to three sets of recording and the playback equipment 1-3, respectively for (4) in the same time zone as the next, (6), and (7). Next, the recording of (4) and (7) is completed, the program of (7) recorded on recording and the playback equipment 1 until the recording of (2) started after that is played, and a request to print out files of playback and recording is assigned to each device so that this may be copied to recording and the playback equipment 3. Furthermore, the reservation of picture recording of (2) or (3) program is assigned to recording and the playback equipment 1, and the reservation of picture recording of the program of (5) is assigned to recording and the playback equipment 2, respectively. The program of series can be recorded on the same tape by this, and also it becomes possible to make the most of the picture recording times of a tape.

[0057](Embodiment 4) Recording and a regeneration control device, and recording and playback equipment, [in / in drawing 1 / a 4th embodiment of this invention] The figure showing the connecting relation of a display, the figure showing the composition of recording and a regeneration control device, the figure showing the composition of recording and playback equipment, and drawing 4 are the figures showing the composition of the display in a 4th embodiment of this invention. [in / in drawing 2 / a 4th embodiment of this invention] [in / in drawing 3 / a 4th embodiment of this invention] The connecting relation of the recording and the regeneration control device in a 4th embodiment, recording and playback equipment, and a display, and the composition of recording and a regeneration control device, The composition of recording and playback equipment and the composition of a display are the same as that of it in a 1st embodiment of this invention, and are [display / recording and playback equipment, and] the same as that of a 1st embodiment also about the operation.

[0058]By a 4th embodiment of this invention, although it is fundamentally the same in a 1st embodiment of this invention, the composition of recording and a regeneration control device, and operation, since there is a difference in the following points, the difference is explained. In the recording and the regeneration control device of drawing 2, the operation input section 203 comprises the ten key for specifying the button, the program, and reservation-of-picture-recording time for specification of the button for control of recording and playback equipment, such as power turn OFF, recording, playback, and a stop, the change of a monitor display, and recording and playback equipment, etc. Are what is seen or he would like to see the image in almost all cases when playing the image of recording and playback equipment with a user here a time of needing, and this, The procedure that specified a certain recording and playback equipment, and playback was directed and of specifying and displaying the video signal line from its recording and playback equipment to a display as next operation will be stepped on, and it is dramatically complicated. This can say the same thing, not only the case of playback but even when checking the reservation of picture recording of specific recording and playback equipment.

[0059]So, in this embodiment, the connecting relation of each recording and playback equipment, and a display is beforehand inputted from the operation input section 203, When specifying a

certain recording and playback equipment from the operation input section 203 and directing playback, by the recording schedule management section 202. While judging the video voice signal line which should be changed from the connection state with the display 100, transmitting a control signal via the transmission section 201 to its recording and playback equipment and directing playback, Also to the display 100, a control signal is transmitted via the transmission section 201, and it directs to choose and display the video signal line from its recording and playback equipment. The same may be said of the time of checking the reservation of picture recording of specific recording and playback equipment.

[0060](Embodiment 5) Recording and a regeneration control device, and recording and playback equipment, [in / in drawing 9 / a 5th embodiment of this invention] The figure showing the connecting relation of a display, the figure showing the composition of recording and playback equipment, and drawing 11 are the figures for explaining the schedule of the recording and playback in a 5th embodiment of this invention. [in / in drawing 10 / a 5th embodiment of this invention] It is the same as that of the figure showing the composition of the recording and the regeneration control device of drawing 5 in a 2nd embodiment of this invention about the internal configuration of the recording and the regeneration control device 805 in drawing 9, About the internal configuration of the display 806 in drawing 9, it is the same as that of the figure showing the composition of the display of drawing 4 in a 1st embodiment of this invention. 801 of drawing 9 a distributor, and 802-804 recording and playback equipment, and 805 Recording and a regeneration control device, The video voice signal line by which a display, 810-813, and 817-825 pass a video voice signal 806, 901 of a controlling signal line and drawing 10 814-817, and 826 Recording and playback equipment, 902 an identification code setting-out means and 903 a transmission and reception section and 904 A tuner, 905 — an appliance control part and 906 — a time check — a means and 907 — an image and a voice recording regenerating section. 908 a switch and 909 a character generation part and 9001 A media classification primary detecting element, A video voice signal line, 911-914, and 917-919, 931 and 932 express a controlling signal line, 915, 920, and 923 express an audio signal line, and 910, and 926-930 express a video signal line 916, 921, 922, and 924.

[0061]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. At drawing 9, each recording and playback equipment 802-804, and recording and a regeneration control device 805 have a transmitting function by this embodiment, respectively with the figure showing the composition in the case of making timed recording by cooperating mutually using three sets of recording and playback equipment. The operation is first explained briefly using drawing 9. The video signal 810 received with CATV or the antenna is distributed by the distributor 801, and is inputted into each recording and playback equipment via the signal wires 811-813. In recording and the regeneration control device 805, an input of the information about other each recording and playback equipment of information required for reservation of picture recording will adjust the schedule of the reservation of picture recording of each recording and playback equipment automatically. After checking a schedule control result, recording reservation data is transmitted to each recording and playback equipment via the signal wires 814-816. The video signal from the recording and playback equipment which sends directions of the switchover control of the display to the display 806 via the signal wire 826, and corresponds the reservation-of-picture-recording situation at this time out of the video signals 819, 822, and 825 can be chosen, and an image can be displayed and checked. These signal wires 819, 822, and 825 are virtual, and may use the radio by infrared light etc. actually. In recording and the playback equipment 802-804, the image and sound of the channel specified that the start time of the reserved program comes are recorded.

[0062]Since the image and voice response of each recording and playback equipment are connected by the input terminal of two sets of other recording and playback equipment as shown in a figure, it is possible to make the copy of an image and a sound between two sets of arbitrary recording and playback equipment. By the case where he would like to record on the same tape, the program eventually broadcast in the same series using this function. It records with the recording and playback equipment which has recording and the regeneration control device 805 temporarily, a schedule is constructed so that it may copy again to the target recording and playback equipment at vacant time, input and output of the image and sound of each recording and playback equipment are controlled, and it carries out to edit automatically.

[0063]Here, it explains in more detail about operation of recording and a regeneration control device. Since it is the same as that of the figure showing the composition of the recording and

the regeneration control device of drawing 5 about the internal configuration of the recording and the regeneration control device 805 in drawing 9, it explains using drawing 5.

[0064]In the recording and the regeneration control device of drawing 5, the data of the number of the recording and playback equipment to be used, etc. besides the data of a channel and start time required for the reservation of picture recording of a program to carry out reservation of picture recording according to the display of the indicator 504 from the operation input section 503, finish time, the image quality in the case of recording, etc. is inputted. Taking advantage of a two-way communication function, via the transmission and reception section 501, it asks each recording and playback equipment one by one, and acquires about the data of the kind of tape with which each recording and playback equipment have equipped, the residue of a tape which can be recorded, etc. When setting up an identification code by the identification code setting-out means of the device of a transmission destination, the identification code corresponding to the identification code set up for every device is set up. These inputted data is memorized by the memory and used for scheduling in the recording schedule management section 502. The control code of each recording and playback equipment is beforehand registered into the memory, and the control code of a beforehand corresponding device is specified as it by an operation input section again. It specifies by the operation input section beforehand also about the connection state between each recording and playback equipment.

[0065]In the recording schedule management section 502, a picture recording program and recording mode are assigned for every device from the connection state between the length of the reserved program, a time zone, the image quality of recording, the kind of tape of each recording and playback equipment, the residue that can be recorded, and each recording and playback equipment, etc. The result assigned by the recording schedule management section 502 is checked by the display of the indicator 504, or the display of a display, and necessary information will be corrected if correction is required. If the check of the contents of reservation of picture recording is received by the operation input section 503, it will be notified to the recording schedule management section 502 via the signal wire 513. The recording reservation data for every recording and playback equipment determined in the recording schedule management section 502 is sent to the transmission and reception section 501 via the signal wire 511, and the control code for every recording and playback equipment is transmitted to recording and playback equipment in the transmission and reception section 501. In order to avoid the erroneous reception of the code between the same models, when the identification code of the device is set up, the identification code is attached and it is transmitted.

[0066]Operation of the recording and playback equipment at this time is explained using drawing 10. The identification code received from the identification code setting-out means 902 via the signal wire 922 when the control information 925 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the transmission and reception section 903 is checked. If it judges that the received control information allots self, the contents will be passed to the appliance control part 905 via the signal wire 912. Here, when recording and playback equipment are plurality, in order to send control information only to a specific device, the code for [with other devices] identifying is beforehand set up by the identification code setting-out means 902. In this case, setting out also with the same recording and regeneration control device side is performed. Setting out of an identification code is performed by selection from a DIP switch or a menu screen.

[0067]When an incoming message is an inquiry (device information-requirements message) of the information by the side of recording and playback equipment in the appliance control part 905, The information on the kind of tape with which it has equipped now which was received from the media classification primary detecting element 9001 via the signal wire 931, The transmission and reception section 903 is passed via the signal wire 912 by making into a device information notification message the information by the side of recording and playback equipment, such as a reservation-of-picture-recording situation currently held in the memory in the residue of the tape received from the image and the voice recording regenerating section 907 via the signal wire 917 which can be recorded, and the appliance control part 905. The transmission and reception section 903 sends this to the recording and regeneration control device side, and notifies it. In the appliance control part 905, when an incoming message is a reservation-of-picture-recording demand, while holding recording reservation data etc. to an internal memory, it sends to the character generation part 909 via the signal wire 919. In the character generation part 909, the received text is changed into a video signal and it outputs to the video signal line 922.

[0068]Based on the control information and the recording schedule from recording and a regeneration control device, directions of a change of the switch 908 are taken out with the appliance control part 905 via the signal wire 918, This outputs that to which the video signal 924 outputted from the video signal 922, or the image and the voice recording regenerating section 907 outputted from the character generation part 909 and the audio signal 923 inner-correspond with the switch 908 to the video voice signal line by which the video voice signal lines 928-930 correspond either.

[0069]furthermore — passing the signal wire 913 in the appliance control part 905 — a time check — it starts [recording start, finish time, or reproduction] for the means 906, and finish time is set as it. a time check — by the means 906, time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time, and it is notified to the appliance control part 905 via the signal wire 913 that a difference is set to 0. If the notice of video recording start time is received, will take out directions of a change on the switch 900 with the appliance control part 905 via the signal wire 932, and with the switch 900 with directions of this change. Based on a recording schedule, any 1 set in the video signal 916 and the audio signal 915 from the tuner 904, or the video voice signals 926 and 927 from two sets of other recording and playback equipment is chosen, and it outputs to the video signal line 921 and the audio signal line 920.

[0070]If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 907 via the signal wire 917 in the appliance control part 905 and the notice of recording finish time comes, directions of a stop will be sent to an image and the voice recording regenerating section 907 via the signal wire 917. When a reproduction start notice and a reproduction terminating notice are received, reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 907 via the signal wire 917, respectively. In an image and the voice recording regenerating section 907, if recording directions are received, the recording of the image and sound of the video signal line 921 and the audio signal line 920 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 907, when reproductive directions are received from the appliance control part 905 via the signal wire 917, the head is pulled out by rewinding or sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When recording by being interlocked with other recording and playback equipment, it cannot be overemphasized that the accuracy of recording can be raised by performing control of a common synchronized signal and a time code.

[0071]In the case of the program recording from the tuner 904, the object of recording sends directions of setting out of the channel specified to the tuner 904 via the signal wire 914 in the appliance control part 905, Based on this, by the tuner 904, the image of the channel of inner specification of the video signal from the video signal line 910 is separated, and a video signal and an audio signal are outputted to the video signal line 916 and the audio signal line 915, respectively. Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0072]By performing schedule control same with having explained using drawing 11 in Embodiment 3 here, According to this invention, efficient recording and editing work unrealizable only by recording individually with two or more recording and playback equipment which employed the recording and the regenerative function of two or more recording and playback equipment in full efficiently are realizable.

[0073](Embodiment 6) A remote controller [in / in drawing 12 / a 6th embodiment of this invention], The figure showing the connecting relation of master side recording and playback equipment, slave side recording and playback equipment, and a display, The figure showing the composition of a remote controller [in / in drawing 13 / a 6th embodiment of this invention], the figure showing the composition of master side recording and playback equipment, and drawing 15 are the figures showing the composition of the slave side recording and playback equipment in a 6th embodiment of this invention. [in / in drawing 14 / a 6th embodiment of this invention] About the internal configuration of the display 1106 in drawing 12, it is the same as that of the figure showing the composition of the display of drawing 4 in a 1st embodiment of this invention.

[0074]In drawing 12, a distributor, and 1102-1104 the numerals 1101 Recording and playback equipment, In a controlling signal line and drawing 13 the video voice signal line by which 1105 pours a remote controller and, as for 1106, a display, 1110-1113, and 1116-1124 pass a video voice signal, and 1114 and 1115, the numerals 1201 — 1215 setting an operation input section

and 1204 to an indicator, being set to a remote controller, and a transmission section and 1202 setting 1211-1213 to a signal wire and drawing 14, and a control section and 1203, Master side recording and playback equipment, and 1302 the numerals 1301 An identification code setting-out means, 1303 a receive section and 1304 a tuner and 1305 Recording schedule management and an appliance control part, 1306 — a time check — an image and a voice recording regenerating section, and 1308 a means and 1307, [and] 1309 a character generation part and 1300 a switch and 13001 A media classification primary detecting element, A transmission and reception section, and 1310, 1328-1330, 1333 and 1334 13002 A video voice signal line, 1315, 1320, and 1323 set 1311-1314, and 1317-1319, 1326, 1327, 1331 and 1332 to a controlling signal line, set them on an audio signal line, and 1316, 1321, 1322, and 1324 are set to a video signal line and drawing 15, The numerals 1401 slave side recording and playback equipment, and 1404 a tuner and 1405 An appliance control part, An image and a voice recording regenerating section switch 1407, and a switch and 1300 switch 1408, A media classification primary detecting element, and 1410, 1426-1430 14001 A video voice signal line, 1411-1412, 1414, and 1417-1418, 1431-1434 express a controlling signal line, 1415, 1420, and 1423 express an audio signal line, and 1416, 1421, and 1424 express a video signal line.

[0075]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. Drawing 12 has shown the composition in the case of making timed recording by cooperating mutually using three sets of recording and playback equipment. The operation is first explained briefly using drawing 12.

[0076]The video signal 1110 received with CATV or the antenna is distributed by the distributor 1101, and is inputted into each recording and playback equipment via the signal wires 1111-1113. In the remote controller 1105, the information about other each recording and playback equipment of information required for reservation of picture recording is inputted. From the remote controller 1105, recording reservation data and control information are transmitted to master side recording and the playback equipment 1102 via the signal wire 1114 in the settled unit. This signal wire 1114 is virtual and may use the radio by infrared light etc. actually. In master side recording and the playback equipment 1102, a recording schedule is constructed from the reserved information etc. which were received from the remote controller 1105. While outputting the contents of reservation of picture recording at this time to the video signal line 1118, directions of the switchover control of the display to the display 1106 are sent via the signal wire 1115, and a schedule control result is displayed as an image. If the displayed schedule control result is satisfactory, confirmative advice will be transmitted to master side recording and the playback equipment 1102 from the remote controller 1105. receiving this result in master side recording and the playback equipment 1102 — an internal time check — if schedule management is performed using a means and the appointed time comes, directions of a recording start and an end, and a playback start and an end will be performed to self, and recording and playback equipment 1102-1104 via the signal wire 1115. In recording and the playback equipment 1102-1104, recording of the specified image and sound and playback are performed based on these directions.

[0077]Since the image and voice response of each recording and playback equipment are connected by the input terminal of two sets of other recording and playback equipment as shown in a figure, it is possible to make the copy of an image and a sound between two sets of arbitrary recording and playback equipment. By the case where he would like to record on the same tape, the program eventually broadcast in the same series using this function. It is also possible to record with the recording and playback equipment which has temporarily master side recording and the playback equipment 1102, to construct a schedule so that it may copy again to the target recording and playback equipment at vacant time, to control input and output of the image and sound of each recording and playback equipment, and to carry out to edit automatically.

[0078]Operation of the remote controller 1105 is first explained in more detail here using drawing 13. In the remote controller 1105 of drawing 13, the data of a channel and start time required for the reservation of picture recording of a program to carry out reservation of picture recording according to the display of the indicator 1204 from the operation input section 1203, finish time, the image quality in the case of recording, etc. is inputted. It specifies from the operation input section 1203 also about the number of the recording and playback equipment used beforehand, or the connection state between devices. These inputted data is suitably sent to a transmission section via the signal wire 1211 as a message for control of master side recording and playback equipment by the control section 1202, and is sent to master side recording and playback

equipment from the transmission section 1201. The recording schedule created with master side recording and playback equipment based on this is checked by the display of a display, if correction is required, necessary information will be corrected from the operation input section 1203, and a check will be inputted if good. It is notified to the control section 1202 by the operation input section 503 that the check of the contents of reservation of picture recording is received via the signal wire 1213. In response in the control section 1202, it sends to a transmission section via the signal wire 1211 as a message for control of master side recording and playback equipment, and transmits to master side recording and playback equipment in the transmission and reception section 1201.

[0079]Operation of the master side recording and the playback equipment 1102 at this time is explained using drawing 14. By drawing 14, the existence of wearing of the tape in recording and playback equipment and the kinds (picture recording times etc.) of tape with which it is equipped are detected in the media classification primary detecting element 13001. In an image and the voice recording regenerating section 1307, the position of the present tape is detected based on the control signal currently recorded synchronizing with the video signal. In recording schedule management and the appliance control part 1305. While acquiring these information via the signal wire 1331 and the signal wire 1317, About information, including the kind of tape with which each recording and playback equipment have equipped, the residue of a tape which can be recorded, etc. Based on the communications protocol defined beforehand, it asks each recording and playback equipment one by one via the transmission and reception section 13002 and the signal wire 1327, information is acquired, and they are recorded on an internal memory.

[0080]In recording schedule management and the appliance control part 1305. Information, including the channel of a program to carry out reservation of picture recording besides the number of the recording and playback equipment to be used which received from the remote controller, or the connection state between devices, start time, finish time, the image quality in the case of recording, etc., is acquired via the signal wire 1312 in the receive section 1303. The length of the program reserved whenever it received new reservation of picture recording, a time zone, The image quality of recording, the existence of wearing of the tape of each recording and playback equipment, the kind of tape, From the connection state between the residue (information received from the value or remote controller computed from the present tape position) which can be recorded, and each recording and playback equipment, etc., a picture recording program and recording mode are assigned for every device, the result is used as a character code, and it outputs to the signal wire 1319. In the character generation part 1309, it changes into the video signal of a display screen from this character code, and outputs to the video signal line 1322. In recording schedule management and the appliance control part 1305. A change is directed via the signal wire 1318 to the switch 1308 simultaneously with this, and the video output 1322 from the character generation part 1309 is outputted to the video signal line with which it is connected to the display in the switch 1308 based on directions of this change. If the check of a recording schedule is received from the receive section 1303 via the signal wire 1312, in recording schedule management and the appliance control part 1305, the contents of reservation of picture recording for every determined recording and playback equipment will be held to an internal memory.

[0081]In recording schedule management and the appliance control part 1305. Thus, based on the control information and the recording schedule from a remote controller, directions of a change of the switch 1308 are issued via the signal wire 1318, By this. That to which the video signal 1324 outputted from the video signal 1322, or the image and the voice recording regenerating section 1307 outputted from the character generation part 1309 with the switch 1308 and the audio signal 1323 inner-correspond on the video voice signal line by which the video voice signal lines 1328-1330 correspond either. It outputs.

[0082]furthermore — passing the signal wire 1313 in recording schedule management and the appliance control part 1305 — a time check — it starts [recording start / for every recording and playback equipment /, finish time, or playback] for the means 1306, and finish time is set as it. a time check — by the means 1306, if time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time and a difference is set to 0, it will notify to recording schedule management and the appliance control part 1305 via the signal wire 1313.

[0083]In recording schedule management and the appliance control part 1305. a time check — the thing to master side recording and playback equipment, or the thing to slave side recording and playback equipment, if the notice from the means 1306 is received, [judge and] When it is a

thing to slave side recording and playback equipment, directions of a recording start and an end, a playback start and an end, display control, etc. are sent to each recording and playback equipment via the transmission and reception section 13002 and the signal wire 1327. When it is a thing to master side recording and playback equipment and the notice of video recording start time is received, issue directions of a change on the switch 1300 via the signal wire 1332, and with the switch 1300 with directions of this change. Based on a recording schedule, any 1 set in the video signal 1316 from the tuner 1304, the audio signal 1315, and the video voice signals 1333 and 1334 from two sets of other recording and playback equipment is chosen, and it outputs to the video signal line 1321 and the audio signal line 1320.

[0084]If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 1307 via the signal wire 1317 in recording schedule management and the appliance control part 1305 and the notice of recording finish time comes, directions of a stop will be sent to an image and the voice recording regenerating section 1307 via the signal wire 1317. When a reproduction start notice and a reproduction terminating notice are received, reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 1307 via the signal wire 1317, respectively. In an image and the voice recording regenerating section 1307, if recording directions are received, the recording of the image and sound of the video signal line 1321 and the audio signal line 1320 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 1307, when reproductive directions are received from recording schedule management and the appliance control part 1305 via the signal wire 1317, the head is pulled out by rewinding or sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When recording by being interlocked with other recording and playback equipment, it cannot be overemphasized that the accuracy of recording can be raised by performing control of a common synchronized signal and a time code.

[0085]Directions delivery of setting out of the channel which the object of recording specified to the tuner 1304 via the signal wire 1314 in recording schedule management and the appliance control part 1305 in the case of the program recording from the tuner 1304. Based on this, by the tuner 1304, the image of the channel of inner specification of the video signal from the video signal line 1310 is separated, and a video signal and an audio signal are outputted to the video signal line 1316 and the audio signal line 1315, respectively. Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0086]Next, operation of slave side recording and playback equipment is explained using drawing 15. By drawing 15, the existence of wearing of the tape in recording and playback equipment and the kinds (picture recording times etc.) of tape with which it is equipped are detected in the media classification primary detecting element 14001. In an image and the voice recording regenerating section 1407, the position of the present tape is detected based on the control signal currently recorded synchronizing with the video signal. In the appliance control part 1405, while acquiring these information via the signal wire 1431 and the signal wire 1417, These information is provided based on the communications protocol beforehand set that there is an inquiry from master side recording and playback equipment via the signal wire 1434, the transmission and reception section 14002, and the signal wire 1433.

[0087]Based on directions of the display control from master side recording and playback equipment, directions of a change of the switch 1408 are taken out with the appliance control part 1405 via the signal wire 1418, This outputs the video signal 1424 and the audio signal 1423 which are outputted from an image and the voice recording regenerating section 1407 with the switch 1408 to the video voice signal line by which the video voice signal lines 1428-1430 correspond either. If directions of a recording start are received from master side recording and playback equipment, will take out directions of a change on the switch 1400 with the appliance control part 1405 via the signal wire 1432, and with the switch 1400 with directions of this change. Any 1 set in the video signal 1416 from the tuner 1404, the audio signal 1415, and the video voice signals 1426 and 1427 from two sets of other recording and playback equipment is chosen, and it outputs to the video signal line 1421 and the audio signal line 1420. If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 1407 via the signal wire 1417 in the appliance control part 1405 and directions of a recording end come from master side recording and playback equipment, directions of a stop will be sent to an image and the voice recording regenerating section 1407 via the signal wire 1417. When a reproduction start notice and a reproduction terminating notice are received,

reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 1407 via the signal wire 1417, respectively.

[0088]In an image and the voice recording regenerating section 1407, if recording directions are received, the recording of the image and sound of the video signal line 1421 and the audio signal line 1420 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 1407, when reproductive directions are received from the appliance control part 1405 via the signal wire 1417, the head is pulled out by rewinding or sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When directions of the program recording from [from master side recording and playback equipment] a tuner come, Directions delivery of setting out of the channel specified to the tuner 1404 via the signal wire 1414 in the appliance control part 1405, Based on this, by the tuner 1404, the image of the channel of inner specification of the video signal from the video signal line 1410 is separated, and a video signal and an audio signal are outputted to the video signal line 1416 and the audio signal line 1415, respectively. Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0089]By performing schedule control same with having explained using drawing 11 in Embodiment 3 here, According to this invention, efficient recording and editing work unrealizable only by recording individually with two or more recording and playback equipment which employed the recording and the regenerative function of two or more recording and playback equipment in full efficiently are realizable.

[0090](Embodiment 7) A remote controller [in / in drawing 16 / a 7th embodiment of this invention], The figure showing the connecting relation of recording and a regeneration control device, recording and playback equipment, and a display, the figure showing the composition of recording and a regeneration control device, and drawing 18 are the figures showing the composition of the recording and playback equipment in a 7th embodiment of this invention. [in / in drawing 17 / a 7th embodiment of this invention] About the internal configuration of the recording and the playback equipment 1502-1505 in drawing 16. It is the same as that of the figure showing the composition of the recording and playback equipment of the slave side of drawing 15 in a 6th embodiment of this invention, and is the same as that of the figure showing the composition of the remote controller of drawing 13 in a 6th embodiment of this invention about the internal configuration of the remote controller 1506 in drawing 16. About the composition of display 1508 inside in drawing 16, it is the same as that of the figure showing the composition of the display of drawing 4 in a 1st embodiment of this invention.

[0091]In drawing 16, a distributor, and 1502-1504 the numerals 1501 Recording and playback equipment, The video voice signal line by which 1506 pours a remote controller, 1507 pours recording and a regeneration control device, and, as for 1508, a display, 1510-1514, and 1517-1125 pass a video voice signal, and 1515 and 1516 express a controlling signal line. In drawing 17, recording and a regeneration control device, and 16002 the numerals 1601 A transmission and reception section, A receive section and 1605 1603 Recording schedule management and an appliance control part, 1606 — a time check — a means and 1608 — a switch and 1609 — a character generation part. 1612-1614, and 1618, 1619, 1626 and 1627 express a signal wire, a video signal line, 1624, 1632-1635, and 1636-1639 express a video voice signal line 1622, and 1625 expresses a controlling signal line. In drawing 18, recording and playback equipment, and 1700 switch the numerals 1701, 17001 a media classification primary detecting element and 17002 a transmission and reception section and 1704 A tuner, 1705 an appliance control part and 1707 an image and a voice recording regenerating section, and 1710 and 1726 A video voice signal line, 1714, 1717, 1731, 1732, 1733, and 1734 express a signal wire, 1715, 1720, and 1723 express an audio signal line, and 1716, 1721, and 1724 express a video signal line.

[0092]The operation is explained below about the remote controller constituted as mentioned above, recording and a regeneration control device, recording and playback equipment, and a display. Drawing 16 has shown the composition in the case of making timed recording by cooperating mutually, using four sets of recording and the playback equipment 1502-1505 recording and regeneration control device 1507. The operation is first explained briefly using drawing 16.

[0093]The video signal 1510 received with CATV or the antenna is distributed by the distributor 1501, and is inputted into each recording and playback equipment via the signal wires 1511-1514. In the remote controller 1506, the information about other each recording and playback equipment of information required for reservation of picture recording is inputted. From the

remote controller 1506, recording reservation data and control information are transmitted to recording and the regeneration control device 1507 via the signal wire 1516 in the settled unit. This signal wire 1516 is virtual and may use the radio by infrared light etc. actually. In recording and the regeneration control device 1507, a recording schedule is constructed from the reserved information etc. which were received from the remote controller 1506. While outputting the contents of reservation of picture recording at this time to the video signal line 1525, directions of the switchover control of the display to the display 1508 are sent via the signal wire 1515, and a schedule control result is displayed as an image. If the displayed schedule control result is satisfactory, confirmative advice will be transmitted to recording and the regeneration control device 1507 from the remote controller 1506. receiving this result in recording and the regeneration control device 1507 — an internal time check — if schedule management is performed using a means and the appointed time comes, directions of a recording start and an end, and a playback start and an end will be performed to self, and recording and playback equipment 1502–1505 via the signal wire 1515. In recording and the playback equipment 1502–1505, recording of the specified image and sound and playback are performed based on these directions.

[0094] Since input and output of the image and the sound of each recording and playback equipment are connected by recording and the regeneration control device 1507 as shown in a figure, and connection of an input and an output can be arbitrarily changed with recording and the regeneration control device 1507, it is possible to make the copy of an image and a sound between arbitrary recording and playback equipment. By the case where he would like to record on the same tape, the program eventually broadcast in the same series using this function. It is also possible to record with the recording and playback equipment which exists temporarily with recording and the regeneration control device 1507, to construct a schedule so that it may copy again to the target recording and playback equipment at vacant time, and to carry out to edit automatically.

[0095] Here, operation of recording and the regeneration control device 1507 is first explained in more detail using drawing 17. By drawing 17, in recording schedule management and the appliance control part 1605. About information, including the kind of tape with which each recording and playback equipment have equipped, the residue of a tape which can be recorded, etc. Based on the communications protocol defined beforehand, it asks each recording and playback equipment one by one via the transmission and reception section 16002 and the signal wire 1627, information is acquired, and they are recorded on an internal memory.

[0096] In recording schedule management and the appliance control part 1605. Information, including the channel of a program to carry out reservation of picture recording besides the number of the recording and playback equipment to be used which received from the remote controller, or a connection state with recording and a regeneration control device, start time, finish time, the image quality in the case of recording, etc., is acquired via the signal wire 1612 in the receive section 1603. The length of the program reserved whenever it received new reservation of picture recording, a time zone, The image quality of recording, the existence of wearing of the tape of each recording and playback equipment, the kind of tape, From the residue (information received from the value or remote controller computed from the present tape position) etc. which can be recorded, a picture recording program and recording mode are assigned for every device, the result is used as a character code, and it outputs to the signal wire 1619. In the character generation part 1609, it changes into the video signal of a display screen from this character code, and outputs to the video signal line 1622. In recording schedule management and the appliance control part 1605. A change is directed via the signal wire 1618 to the switch 1608 simultaneously with this, and the video output 1622 from the character generation part 1609 is outputted to the video signal line 1624 with which it is connected to the display in the switch 1608 based on directions of this change. If the check of a recording schedule is received from the receive section 1603 via the signal wire 1612, in recording schedule management and the appliance control part 1605, the contents of reservation of picture recording for every determined recording and playback equipment will be held to an internal memory.

[0097] In recording schedule management and the appliance control part 1605. Thus, based on the control information and the recording schedule from a remote controller, directions of a change of the switch 1608 are issued via the signal wire 1618, This outputs that to which the video signal 1622 outputted from the character generation part 1609 or the video voice signal 1624, and the audio signals 1632–1635 inner-correspond with the switch 1608 to the video voice

signal line by which the video voice signal lines 1624, 1636-1639 correspond either.

[0098]furthermore — passing the signal wire 1613 in recording schedule management and the appliance control part 1605 — a time check — it starts [recording start / for every recording and playback equipment /, finish time, or playback] for the means 1606, and finish time is set as it. a time check — by the means 1606, if time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time and a difference is set to 0, it will notify to recording schedule management and the appliance control part 1605 via the signal wire 1613.

[0099]recording schedule management and the appliance control part 1605 — a time check — if the notice from the means 1606 is received, directions of a recording start and an end, a playback start and an end, display control, etc. will be sent to recording and the playback equipment concerned via the transmission and reception section 16002 and the signal wire 1627. Issue directions of a change on the switch 1608 via the signal wire 1618, and with the switch 1608 with directions of this change. An internal-matrix switch is changed based on a recording schedule, and an image and the voice input 1632-1635 are connected to an image and the voice response 1624, 1636-1639 corresponding, respectively. Directions of a stop will be sent, if it can come, simultaneously recording directions are sent to recording and the playback equipment concerned via the transmission and reception section 16002 and the signal wire 1627 in recording schedule management and the appliance control part 1605 and the notice of recording finish time comes. When a playback start notice and a playback terminating notice are received, reproduction instruction and directions of a stop are similarly sent to recording and the playback equipment concerned via the signal wire 1627, respectively. When recording by being interlocked with other recording and playback equipment, it cannot be overemphasized that the accuracy of recording can be raised by performing control of a common synchronized signal and a time code. [0100]Next, operation of recording and the playback equipment 1502-1505 is explained in more detail using drawing 18. By drawing 18, the existence of wearing of the tape in recording and playback equipment and the kinds (picture recording times etc.) of tape with which it is equipped are detected in the media classification primary detecting element 17001. In an image and the voice recording regenerating section 1707, the position of the present tape is detected based on the control signal currently recorded synchronizing with the video signal. In the appliance control part 1705, while acquiring these information via the signal wire 1731 and the signal wire 1717, These information is provided based on the communications protocol beforehand set that there is an inquiry from recording and a regeneration control device via the signal wire 1734, the transmission and reception section 17002, and the signal wire 1733.

[0101]Based on directions of the display control from recording and a regeneration control device, directions of a change of the switch 1700 are taken out with the appliance control part 1705 via the signal wire 1732, This outputs the video signal 1424 and the audio signal 1423 which are outputted from an image and the voice recording regenerating section 1407 with the switch 1708 to the video voice signal line by which the video voice signal lines 1428-1430 correspond either.

[0102]In the appliance control part 1705, if directions of a recording start are received from recording and a regeneration control device via the signal wire 1734, the transmission and reception section 17002, and the signal wire 1733, Issue directions of a change on the switch 1700 via the signal wire 1732, and with the switch 1700 with directions of this change. The video signal 1716 from the tuner 1704, the audio signal 1715, and the input signal with which it corresponds of the video voice signals 1726 from other recording and playback equipment are outputted to the video signal line 1721 and the audio signal line 1720. If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 1707 via the signal wire 1717 in the appliance control part 1705 and directions of a recording end come from master side recording and playback equipment, directions of a stop will be sent to an image and the voice recording regenerating section 1707 via the signal wire 1717. When a reproduction start notice and a reproduction terminating notice are received, reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 1707 via the signal wire 1717, respectively.

[0103]In an image and the voice recording regenerating section 1707, if recording directions are received, the recording of the image and sound of the video signal line 1721 and the audio signal line 1720 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 1707, when reproductive directions are received from the appliance control part 1705 via the signal wire 1717, the head is pulled out by rewinding or

sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When directions of the program recording from [from master side recording and playback equipment] a tuner come, Directions delivery of setting out of the channel specified to the tuner 1704 via the signal wire 1714 in the appliance control part 1705, Based on this, by the tuner 1704, the image of the channel of inner specification of the video signal from the video signal line 1710 is separated, and a video signal and an audio signal are outputted to the video signal line 1716 and the audio signal line 1715, respectively. Since it is the same as that of Embodiment 5 about operation of the remote controller 1506, and operation of the display 1508, it omits.

[0104]By performing schedule control same with having explained using 10 figures in Embodiment 3 here, According to this invention, efficient recording and editing work unrealizable only by recording individually with two or more recording and playback equipment which employed the recording and the regenerative function of two or more recording and playback equipment in full efficiently are realizable.

[0105]

[Effect of the Invention]As mentioned above, it becomes possible by using this invention to perform scheduling of finer reservation of picture recording to the 1st by synthesizing information, including the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, etc.

[0106]By providing the means of communication which can communicate both directions [recording and playback equipment, and / recording and a regeneration control device] respectively, to the 2nd, information, including the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, etc., can be exchanged automatically, and user-friendliness is substantially improved.

[0107]More advanced schedule organization of the dubbing compilation etc. which used the idle time of reservation of picture recording for the 3rd, for example when recording and a regeneration control device grasped the connection situation of each apparatus is also attained.

[0108]While recording and a regeneration control device judge the demand of a user's rebirth, reservation confirmation, etc. to the 4th and takes out reproductive directions to it at predetermined recording and playback equipment, complicated operation becomes unnecessary by directing to display the image and voice response of its recording and playback equipment also to a display.

[0109]By providing the means of communication which can communicate both directions [recording and playback equipment, and / recording and a regeneration control device] respectively in the 5th, When recording and a regeneration control device grasp the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, and the connection situation of each apparatus in response to information from recording and playback equipment, advanced recording schedule organization can be performed more smoothly.

[0110]the recording and playback equipment of the 6th master side — a time check — by giving the function of a means and schedule management, the composition of the recording and playback equipment of many slave sides can be simplified, and recording and a reproducing system low cost as a whole can be built.

[0111]By carrying out switchover control of the input and output of the video voice signal between two or more recording and playback equipment, and a display to the 7th by a matrix switcher, It makes it possible to perform the playback and the display, and dubbing of a video voice signal between the appointed devices, without increasing the input/output terminal of each recording and playback equipment, and a display.

[Translation done.]

*** NOTICES ***

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- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]The figure showing the connecting relation of the recording and the regeneration control device in the 1st embodiment and 4th embodiment of this invention, recording and playback equipment, and a display

[Drawing 2]The figure showing the composition of the recording and the regeneration control device in the 1st embodiment and 4th embodiment of this invention

[Drawing 3]The figure showing the composition of the recording and playback equipment in the 1st embodiment and 4th embodiment of this invention

[Drawing 4]The figure showing the composition of the display in the 1st embodiment and 4th embodiment of this invention

[Drawing 5]The figure showing the composition of the recording and the regeneration control device in a 2nd embodiment of this invention

[Drawing 6]The figure showing the composition of the recording and playback equipment in a 2nd embodiment of this invention

[Drawing 7]The figure showing the exchange of the control information between the recording and the regeneration control device, and each recording and playback equipment in a 2nd embodiment of this invention

[Drawing 8]The figure showing the composition of the recording and playback equipment in a 3rd embodiment of this invention

[Drawing 9]The figure showing the connecting relation of the recording and the regeneration control device in the 3rd embodiment and 5th embodiment of this invention, recording and playback equipment, and a display

[Drawing 10]The figure showing the composition of the recording and playback equipment in a 5th embodiment of this invention

[Drawing 11]The figure for explaining the schedule of the recording and playback in the 3rd embodiment and 5th embodiment of this invention

[Drawing 12]The figure showing the connecting relation of the remote controller in a 6th embodiment of this invention, recording and a regeneration control device, recording and playback equipment, and a display

[Drawing 13]The figure showing the composition of the remote controller in a 6th embodiment of this invention

[Drawing 14]The figure showing the composition of master-side recording and playback equipment in a 6th embodiment of this invention

[Drawing 15]The figure showing the composition of the recording and playback equipment of the slave side in a 6th embodiment of this invention

[Drawing 16]The figure showing the connecting relation of the remote controller in a 7th embodiment of this invention, recording and a regeneration control device, recording and playback equipment, and a display

[Drawing 17]The figure showing the composition of the recording and the regeneration control device in a 7th embodiment of this invention

[Drawing 18]The figure showing the composition of the recording and playback equipment in a 7th embodiment of this invention

[Drawing 19]The lineblock diagram of the remote control in a conventional example

[Description of Notations]

101 Distributor

102-104 Recording and playback equipment

105 Recording and a regeneration control device
106 Display
110-113, 118-120 Video voice signal line
114-117 Controlling signal line
201 Transmission section
202 Recording schedule management section
203 Operation input section
204 Indicator
211-213 Signal wire
301 Recording and playback equipment
302 Identification code setting-out means
303 Receive section
304 Tuner
305 Appliance control part
306 a time check — a means
307 An image and a voice recording regenerating section
308 Switch
309 Character generation part
310 Video voice signal line
311-314, 317-319 Controlling signal line
315, 320, and 323 Audio signal line,
316, 321, 322, and 324 Video signal line
408 Display
401 Identification code setting-out means
402 Receive section
403 Display control part
404 Voice output part
405 Character generation part
406 Switch
407 Image display
410, 414-417, 420, and 422 Controlling signal line
411-413 Video voice signal line
418 Audio signal line
419 and 421 Video signal line
501 Transmission and reception section
502 Recording schedule management section
503 Operation input section
504 Indicator
511-513 Signal wire
601 Recording and playback equipment
602 Identification code setting-out means
603 Receive section
604 Tuner
605 Appliance control part
606 a time check — a means
607 An image and a voice recording regenerating section
608 Switch
609 Character generation part
6001 Media classification primary detecting element
610 Video voice signal line
611-614, 617-619, and 631 Controlling signal line
615, 620, and 623 Audio signal line
616, 621, 622, and 624 Video signal line
701 Recording and playback equipment
702 Identification code setting-out means
703 Receive section
704 Tuner
705 Appliance control part
706 a time check — a means

707 An image and a voice recording regenerating section
708 Switch
709 Character generation part
710, 726-730 Video voice signal line
711-714, 717-719, and 732 Controlling signal line
715, 720, and 723 Audio signal line
716, 721, 722, and 724 Video signal line
801 Distributor
802-804 Recording and playback equipment
805 Recording and a regeneration control device
806 Display
810-813, 817-825 Video voice signal line which passes a video voice signal
814-817, and 826 Controlling signal line
901 Recording and playback equipment
902 Identification code setting-out means
903 Transmission and reception section
904 Tuner
905 Appliance control part
906 a time check — a means
907 An image and a voice recording regenerating section
908 Switch
909 Character generation part
9001 Media classification primary detecting element
910, 926-930 Video voice signal line
911-914, 917-919, 931, and 932 Controlling signal line
915, 920, and 923 Audio signal line
916, 921, 922, and 924 Video signal line
1101 Distributor
1102-1104 Recording and playback equipment
1105 Remote controller
1106 displays
1110-1113, 1116-1124 Video voice signal line which passes a video voice signal
1114 and 1115 Controlling signal line
1201 Transmission section
1202 Control section
1203 Operation input section
1204 Indicator
1211-1213 Signal wire
1301 Master side recording and playback equipment
1302 Identification code setting-out means
1303 Receive section
1304 Tuner
1305 Recording schedule management and an appliance control part
1306 a time check — a means
1307 An image and a voice recording regenerating section
1308 Switch
1309 Character generation part
1300 Switch
13001 Media classification primary detecting element
13002 Transmission and reception section
1310, 1328-1330, 1333, and 1334 Video voice signal line
1311-1314, 1317-1319 Controlling signal line
1326, 1327, 1331, and 1332 Controlling signal line
1315, 1320, and 1323 Audio signal line
1316, 1321, 1322, and 1324 Video signal line
1401 Slave side recording and playback equipment
1404 Tuner
1405 Appliance control part
1407 An image and a voice recording regenerating section

1408 Switch
1300 Switch
14001 Media classification primary detecting element
1410, a 1426 – 1430 video-voice-signal line
1411–1412, 1414, a controlling signal line
1417–1418, 1431–1434 Controlling signal line
1415, 1420, and 1423 Audio signal line
1416, 1421, and 1424 Video signal line
1501 Distributor
1502–1504 Recording and playback equipment
1506 Remote controller
1507 Recording and a regeneration control device
1508 Display
1510–1514, 1517–1125 Video voice signal line which passes a video voice signal
1515 and 1516 Controlling signal line
1601 Recording and a regeneration control device
16002 Transmission and reception section
1603 Receive section
1605 Recording schedule management and an appliance control part
1606 a time check — a means
1608 Switch
1609 Character generation part
1612–1614, 1618, 1619, 1626, and 1627 Signal wire
1622 Video signal line
1624, 1632–1635, 1636–1639 Video voice signal line
1625 Controlling signal line
1701 Recording and playback equipment
1700 Switch
17001 Media classification primary detecting element
17002 Transmission and reception section
1704 Tuner
1705 Appliance control part
1707 An image and a voice recording regenerating section
1710 and 1726 Video voice signal line
1714, 1717, 1731, 1732, 1733, and 1734 Signal wire
1715, 1720, and 1723 Audio signal line
1716, 1721, and 1724 Video signal line
1801 Specification matter input part
1802 Recording ranking input part
1803 Final controlling element
1804 Tape information input part
1805 Control section
1806 Storage parts store
1807 Transmit code generation part
1808 Transmission section

[Translation done.]

個別制御することとを特徴とする請求項4記載の録画・再生システム。

【請求項6】 双方向の通信が可能な通信手段を具備し、各線路・再生装置に対した制御コードにより制御信号を各線路・再生装置に送信可能なとともに、線路・再生装置から線路スケジュール編成のための情報を受信可能なことを特徴とする請求項1または2記載の線路・再生制御装置。

【請求項7】 双方向の通信が可能な通信手段を具備し、録画・再生制御装置からの制御信号を受信するとともに、録画スケジュール編成のための情報を送信可能であることを特徴とする請求項3記載の録画・再生装置。

【附求項8】 録画スケジュール編成のための情報が、録画・再生装置の種類、録画・再生装置の機能、録画・

再生装置の性能、録画メディアの装荷状態または装荷、装着されている録画メディアの録画可能時間または容量、装着されている録画メディアの録画済み時間または容量、装着されている録画メディアの残量時間または容量、装着されている録画メディアの種類、録画チャネルや録画時刻を含む録画予約情報、録画の再生装置内の稼働状況、録画・再生状態と表示される録画の接続状態のいずれか1つ以上である第17記載の装置、再生装置を含む。

【附事項9】 従来の「録画・再生装置」に属する録画スケジューリングのための情報および番組の録画予約を入力するデータ入力手段と、録画スケジュール編集のための情報を基にされた録画スケジュールの各録画・再生装置への割り当てのスケジュール編集を行う録画スケジューリング手段と、各録画・再生装置に接続した制御ユニットによる

り制御信号号を各録画・再生装置に送信可能であることも、録画・再生装置から録画スケジュール編成のための情報を受信可能である双方の通信が可能で通信手段と有する録画・再生制御装置、および録画・再生制御信号を受信する録画・再生装置との制御信号号を、録画のための情報を送信可能である双方の通信が可能で通信手段と、放送番組の運用を行なう運用手段と、映像情報または音声情報を受信する映像・音声記録再生手段と、自己の識別コードに設定する識別コード設定手段とを備え、識別コードに於て録画・再生制御装置からの制御信号を受信し、録画スケジュールに於て、録画・再生を行なう録画・再生装置により構成され、録画スケジュールの編成および管理動作を録画・再生制御装置で行なう一方、録画および再生動作を録画・再生装置で行なうようにしたことを特徴とする録画・再生システム。

【図事項10】 観面・再生装置は複数台が1台の観面・再生船舶装置に接続され、前記1台の観面・再生制御装置が識別コードを用いて前記複数台の観面・再生装置を個別制御することを特徴とする図事項9記載の観面・再生システム。

【図事項11】 複数台の観面・再生装置は、各観面・再生船舶装置に接続され、前記1台の観面・再生制御装置が識別コードを用いて前記複数台の観面・再生装置を個別制御することを特徴とする図事項9記載の観面・再生システム。

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【特殊要求の範囲】

【評価項目1】 複数アカウント・再生装置に関する録画スケジュール管理手段と、各アカウント・再生装置に対して個別ユーザによるデータ入力手段と、録画スケジュール組のための情報登録に投入された録画予約の各録画・再生装置への割り当てのスケジュール組成を行う録画スケジュール管理手段と、各アカウント・再生装置に対応した制御コードにより制御手段と、各録画・再生装置に送信する送信手段とを有する録画・再生制御装置。

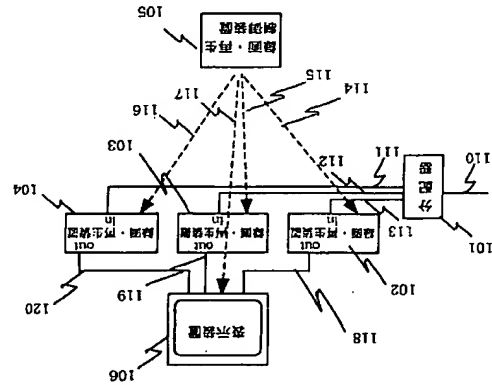
【請求項2】 録画スケジュール編組のための情報が、
録画・再生装置の機能、録画・再生装置の情報、録画・再生装置の状態、録画メディアの装着の有無、装着され、装着されている録画メディアの機能読み取られたたは空き、装着されている録画メディアの未装着時または空き、装着されている録画メディアの電圧、録画サイクルと録画時間を含む録画データ情報、録画・再生装置間の接続状態、録画・再生装置と表示装置間の接続状態のいずれか1つ以上であることを特徴とする請求項1記載の録画・再生装置。

【備考事項3】 映画・再生ビデオ装置からの映像信号を受信する受信手段と、放送番組の選択を行なう選択手段とと、映像情報または音声情報を記録する映像・音声記録装置とを備え、再生手段と、自己の感知した感知モードを決定する感知モード決定手段とを備え、感知モードにしたがって映画・再生動画装置からの映像信号を受信し、映像スケジューラに格納された映画・再生を行なうことを特徴とする映画・再生装置。

【事例4】 複数の録画、再生装置に関する録画スケジュール編集のための情報および番組の録画予定を入力するデータ入手手段、録画スケジュール編集のための情報を基に入力された録画を行う各録画、再生装置への制御命令での入力された録画スケジュール情報と、各録画、再生装置に対応した制御コードにより、制御番号を各録画、再生装置に送信する送信手段とを有する録画、再生制御装置、および録画、再生装置を有する録画、再生装置を受信する受信手段と、放送番組の運用を行なう運用局と、放送情報に基づき、制御コードを設定する映像、音声放送手段、映像情報に基づき、制御コードを設定する制御コード設定手段を備え、制御コードに基き、録画、再生装置から制御信号を受信し、録画スケジュールに基き、録画、再生を行なう録画、再生装置に接続され、スケジュールに基づき、録画、再生を行なわれる。

映画スケジュールの編成および管理動作を映画・再生制御装置で行なう一方、映画および再生動作を映画・再生装置で行なうようにしたことを特徴とする映画・再生システム。

【請求項5】 録画・再生装置は複数台が1台の録画・再生制御装置に接続され、前記1台の録画・再生制御装置が識別コードを用いて前記複数台の録画・再生装置を



生装置毎に異なる制御コードを持つまたは、異なる制御コードを割り当てることが可能であることを特徴とする。
請求項5または10記載の装置・再生システム。

【請求項12】 録画スケジュール編成のための情報
が、録画・再生装置の機能、録画・再生装置の機能、録
画・再生装置の性能、録画メディアの装着の有無、装着

とされている。図面メディアの録画可能時間または容量、装
着されている図面メディアの録画済み時間または容量、装
着されている図面メディアの未録画済み時間または容量、
装着されている図面メディアの録画メディアの履歴、図面チャネルや録
画時間を含む図面予約情報、録画・再生装置間の接続状
態、図面・再生装置と表示装置間の接続状態のいずれか
1つ以上であることと特徴とする請求項4または5、ま
たは9乃至12のいずれか1つに記載の図面・再生システ
ム。

【請求項13】 表示装置、毎周、再生装置毎の制御ユニットおよび各録音・再生装置と表示装置間の接続状態を監視しておくメモリを持ち、毎周、再生制御装置からの制御信号によって再生を指定した録音・再生装置からの制御信号によって再生を、再生と同時に選択し表示するように、録音・再生信号を、再生と同時に選択し表示するように、録音・再生信号を送信することと特徴とする請求項1乃至12または6記載の録音・再生制御装置。

【請求項14】放送番組の選局を行なう選局手段と、映像情報または音声情報を配する映像・音声記録再生手段と、自己の識別コードを規定する識別コードを規定する手段と、映像・再生装置毎に異なる制御コードを持つ映像・再生装置と、異なる制御コードを割り当てること可能な複数の映像・再生装置と、

録画・再生制御装置からの制御信号を受ける受信部と受信部で受けた録画・再生制御装置からの制御信号を基にスイッチを制御して映像・音声の入力の切り替えを行う表示制御部とを少なくとも有する表示装置と

[illegible]

【請求項15】 放送番組の選局を行なう選局手段と、映像情報または音声情報を記録する映像・音声記録再生手段と、映像・再生装置毎の制御コードおよび各映像・手段と、

放送番組の運用を行なう運用手段と、映像情報または音声情報を記録する映像・音声記録再生手段と、自己の識別コードを設定する識別コード設定手段とを備えた複数の録画・再生装置と、

録画、再生制御装置からの制御信号を受ける受信部と受信部から再生制御装置への再生制御信号を基に再生制御装置に送信する送信部とを有する録画・再生装置を制御して映像・音声の入力の切り替えを行う表示制御部とを有する録画・再生装置とを少なくとも2台構成するシステムに、複数の録画・再生装置同士または複数の録画・再生装置と放送装置間の映像・音声信号の入出力を録画・再生装置と放送装置間のマトリックス・スイッチで制御し、このことにより、予知録画を行うことを特徴とする録画・再生システム。

【発明の詳細な説明】
【0001】
【発明の属する技術分野】本発明は、映像情報を効率的に予め撮影する装置・再生装置に関するものである。

[0002]

【従来の技術】従来、複数の磁面装置を利用して予約磁面を行うシステムとして、特開平5-282736号に記載された近距離防磁装置がある。これは、1本の磁気テープに配線された異なる長間隔番組について、複数の磁面装置を用いて複数の磁気テープに映像を記録することによって連続して録画することと可能とするものである。以下、図面を用いて、従来例の説明を行う。図18は従来例における近距離防磁装置の構成図である。図19においては、符号1801は複数の磁面装置の中から特定の磁面装置にのみ送信コードを転送するためのコードを規定す

力する戦艦隊員入部、1803は操縦部、1804は力サー情報入部、1805は制御部、1806は砲撃師、1807は通信コード養成所、1808は送信部で
ある。先ず、予め指定事項入部1801から使用する
戦艦装置部に指定事項の入力を行って、指定事項入
部1801では、入力された指定事項を記憶部180
6に記憶する。また、1809の戦艦隊員入部前から戦
艦表装飾する順番の入力を行う。戦艦頭像1部1
802では入力された戦艦頭像の戦艦の順番を記憶部1
806に記憶する。また、サブ情報入部1804

で、個々の繰上装置に納入する当該繰上装置の残高を時
情報として明瞭にする。テープ情報入力部1804では、
この情報を印刷部に転送する。さらに、繰上装置1803
から個々の繰上装置の繰上期間別、繰上機内時刻、放
射チャンネル等の繰上予約情報を入力し、繰上機内1805
3では、この情報を制御部へ転送する。制御部1805
では、記憶部1806に記憶された繰上装置毎の指定革
項と繰上期間位置とを比較し、これに一致する繰上
が取付けられた各繰上装置の繰上予約情報と、テープ
情報入力部1804から受け取った当該繰上装置の残高
とを比較し、個々の繰上装置に転送する繰上予約情
報を決定し、個々の繰上装置の繰上装置毎の繰上

表装に対する録画平野に必要な情報を送信コード生成部1807へ転送する。送信コード生成部1807では、各々の録画表装の録画平野と指定事項を送信コードに変換し送信部1807へ送る。送信部1807では、受け取った送信コードと所定の信号方式にて録画表装へ送信する。これによって、長時間番組の複数の録画表装を利用した録画が可能となる。

【00003】
【発明が解決しようとする課題】録音・再生装置の普及により頻にも手軽に映像を録画して楽しむようになっ
てきた。従来の番組の録音・再生やダイビングのために複数の録
画装置を使用する場合も多く見られるようになってき
いた。また、録音・再生装置はB/S放送対応のものからH
i-Fi（High Fidelity）音声の録音装置の付いたもの
のや録画方式の違いなど色々と多岐にわたる種類の装置が提供されて
いる。このような状況に因って、複数の番組の録画予約
を行う場合、どの装置にどの番組組を録画予約にしたいら
いかなどと総て人間で判断して各録音・再生装置毎に付属
する録画予約装置で、異なる録画予約手順・番組組の予約
を行わなければならないため、手間がかかるという録画に
失敗してしまうといった問題が生じて来ている。従来例
に示した遠隔制御装置では、複数の録画装置を用いて長
時間番組を録画することと可能としたが、長時間番組の
リレー録画を主観としたものであり、複数の録音・再生
装置を駆使して複数の番組組を自在に録画、再生して見る
ことは実現できていなかった。また、過去にした所を詰め
るなどといった処理が出来ない他、モニタで複数の番組の録
音・再生装置の録画内容を確認したり、録画した映像を
再生する場合は、いちいち手でモニタの表示を切り替える
必要があった。

【0004】本発明は上記従来の問題点に鑑みてなされたもので、その第1の目的は、映像情報効率率的に予約録画することのできる録画・再生装置を提供することである。

【0005】本発明の第2の目的は、複数の映画・再生装置を駆使して複数の番組を自在に録画、再生することのできる録画・再生装置を提供することである。

【0006】本発明の第3の目的は、録画予約の空き時間を利用した編集などのより高度なスケジュール編成が可能な録画・再生装置を提供することである。

[0007]

【問題】を解決するための手段 この問題を解決するために、指定された表形式第1に、外部からの印刷番号により、指定された時刻に指定した番組の録画・再生を行うことが可能になる装置と、それらの録画・再生装置と、それらの録画・再生装置との間で、録画・再生の指示を与える録画・再生制御部（印刷番号により録画・再生の指示を受ける録画・再生制御部）と、それらの録画・再生装置とはそれぞれ別の録画・再生装置として設けられ、録画・再生装置を識別するための識別コードを割り当て、録画・再生装置はこれら識別コードおよび動作時間情報（例えば、前次に入力された録画チャネルや録画時間を保持する記憶部）を用いて、録画・再生制御部から送られる録画・再生の指示に従って、録画・再生を行う。

ある。

【0011】第5に、第3の解決手段で示した構成において、図面（再生制御情報）をそれぞれ、双方方向の通信可能な通信手段を具備し、図面と再生制御情報のデータの有無、残り情報情報を図面・再生制御部に返すことにより、これらの情報に基づき図面・再生制御部上で取り扱うデータの番割りのスケジューリングを行うものである。

【0012】第6に、マスター側・slave側の録画・再生制御装置が、全ての録画時間におけるマスター側からslave側の管理に対して録画・再生装置に録画開始信号を送信して装置により録画・再生時間となるように、slave側の録画・再生装置を行わたることにより、slave側の録画・再生装置の動作手段を不要とし、安価な録画装置を接続して多くの映像の録画が可能とするものである。

【0013】第7に、複数の録音・再生装置および表示装置間の映像・音声信号の入出力をマトリックススイッチング方式で制御装置が行うことにより、個々の録音・再生装置および表示装置の入出力端子を専用ことなく特定の装置間で映像・音声信号の再生・表示やダイビングを行うことを可能とするものである。

図の予約図面を行うものである。

[0009]第3に、外側からの制御信号により、指定した時刻に指定した番組の録画・再生を行うことが可能となる。

なお該の録画・再生装置と、それらの録画・再生装置（制御信号により録画・再生の指示を与える録画・制御装置）とにおいて、録画・再生装置にはそれぞれ録画・再生装置を制御するための識別コードが割り当てられ、録画・再生制御装置はこれらの識別コードおよび各録画・再生装置間の結線状態および操作入力部から入力された録画・したい番組の番組番号等の録画スケジュールした録画・したい番組の記憶にしておくメモリと、録画したい番組のための情報を配列しておくメモ리와、録画したい番組のため予約の消し、消去を受付付する操作入

【0015】本発明の請求項2に記載の発明は、請求項1に記載の録画・再生制御装置において、録画スケジュール制御のための情報が、録画・再生装置の機能、録画・再生装置の性能、録画・再生装置の特性、録画・再生装置の用途、録画・再生装置の容量、装着されている録画メディアの再生可能な時間または容量、装着されている録画メディアの未使用時間または容量、装着されている録画メディアの履歴時間または容量、装着されている録画メディアの種別コードを含む制御情報を当該録画・再生装置に送値することにより所望の番組の番組の予約録画を行うものである。

類、録取チャネル毎の録取時間を各チャネル毎に計測する計測情報、録取時間、録取チャネル毎の録取結果情報、録取・再生装置間の接続状況、録取・再生装置間の接続時間、録取・再生装置の温度や、性組、装着するメディアの温度などの情報を総合する事により、よりきめ細かい検出や検出データのスケジューリングを行うことができるという作用を有する。

制御するシステムを提供することで、いちいち手動で表示を切り替えずに録画・再生を行えるようにするもので、再生装置に、録画・再生制御装置からの制御信号を受信【0016】本発明の請求項3に記載の発明は、録画・

により、複数の映画・再生装置の種類や、性能、装着するメディアの状況などの情報を自動的にやり取り出来、使い勝手が大幅に改善されるという作用を有する。

【0021】本発明の請求項8に記載の発明は、請求項7記載の録画、再生装置において、録画スケジュール生成のための情報が、録画、再生装置の機能、録画、再生装置の構成、録画、再生装置の性能、録画、再生装置の用途、録画メディアの装填の有無、装着されている録画メディアの録画可能時間または容量、装着されている録画メディアの未録画時間または空き容量、装着されている録画メディアの種類、再生装置と録画メディアを含む録画システムの構成、録画、再生装置と表示装置間の接続状態、録画、再生装置と外部装置との接続状態、録画、再生装置の機能や、性能、装着するメディアの状況などの情報とを総合する事により、よりきめ細かい録画予約のスケジュールリングを行うことができるという作用を有する。

【0022】本発明の請求項9に記載の発明は、動画再生システムにおいて、視聴者の動画・再生装置に関する再生スケジュール編集のための情報および番組の動画予約を入力するデータ入力手段と、動画スケジュール編集を行う動画スケジュール管理手段と、各動画・再生装置に対応した制御コードにより、動画・再生装置に送信可能であることにより、動画・再生装置より動画生成が可能となるための情報の受信および双方方向の通信が可能な通常の通信を可能とする動画・再生制御装置、および、動画・再生制御装置からの制御信号を受信することにより、動画・再生装置に組み込まれた制御コードに従って動作し、放送番組の視聴を行なう通常の通信を可能とする視聴者端末と、放送番組を記録する磁気、音声周知録画再生手段と、自己の識別コードを設定する識別コード設定手段とを備え、識別コードにしたがつて動画・再生制御装置からの制御信号を受信し、動画スケジュールに沿った動画・再生を行なう動画・再生装置により構成されたものであり、動画スケジュールの編成および管理動作を動画・再生制御装置で行なう一方、動画および管理動作を動画・再生装置で行なうことができ、動画スケジュールを管理することにより使用権限を効果的に掌握する動画生成が行なわれることによる作用を有する。

【0023】本発明の請求項10に記載の発明は、請求項9記載の装置、再生システムにおいて、録音、再生装置の両面は複写台が1号の録音、再生制御装置に接続され、前記複写台の録音、再生制御装置が個別コードを用いて前記複写台の録音、再生装置を個別制御するようにしたものである。複写台の録音、再生装置と個別制御するようにより、各録音、再生装置の性能、状況に応じた録音及び再生動作が可能となり、実行できるという作用を有する。

【0024】本発明の請求項11に記載の発明は、請求

項目5または10記載の映画・再生システムにおいて、複数の映画・再生装置は、各映画・再生装置毎に異なる制御コードを持つまたは、異なる制御コードを割り当てる。このことが可能であるようにしたものであり、複製映画データのスケジュールを管理できるという作用を有する。

【0025】本発明の請求項12に記載の発明は、請求項4または5、または9乃至12のいずれかに記載の發明・再生システムにおいて、録画スケジュール構成のため情報が、録画・再生装置の領域、再生装置の領域、録画・再生装置の領域、録画メディアの装填の有無、装着されている録画メディアの種類、録画メディアの容量、装着されている録画メディアの未使用時間または空き量、装着されている録画メディアの種類、録画メディアの容量、装着されている録画メディアの種類、録画メディアの未使用時間を含む録画データ情報、録画・再生装置と表示装置間の接続状態などの格納状態、録画・再生装置と表示装置間の接続状態のいずれか1つ以上であるようにしたものであり、録画・再生装置の領域や、性能、装着するメディアの状態など情報を統合する事により、よりきめ細かな録画予約のスケジューリングを行うことができるという作用を有する。

【0026】本発明の請求項13に記載の発明は、請求項1または2または6に記載の録音・再生制御装置において、表示装置と、再生装置側の制御部とにより各々録音・再生装置と表示装置間の接続状態を記憶しておくメモリを持ち、録音・再生制御装置からの制御信号によって再生を指示するように表示装置に命令を、再生と同時に選択し表示するように表示装置に制御信号を送信するようにしたものであり、再処理によりユーザは再生番組の内容をより一層知ることができるといって有益である。

[illegible]

くメモリとを持ち、録面・再生制御装置からの制御信号によって再生を指定した録面・再生装置からの映像・音声信号を、再生と同時に増強し表示するように表示装置に制御信号を送信する録面・再生制御装置とから構成したものであり、いちいち手で表示を切り替えずに、指定の録面・再生装置からの映像の再生に合わせ表示装置の表示を切り替えることができるという作用を有する。

【0.2.8】本邦の精米15に配給の奨励は、穀類・再生葉類に、放送番組の配給を行なう為の手段と、映像情報とでは音声を配給する映像・音声配給再生手段と、穀類・再生葉類の両側面において各々、メカニカル手段の結核状態および調子約を造るものとして、両側面約の各穀類・再生葉類への割り当てのスケジューム編成を行う為のスケジューム手段とを内部に持ったものであり、マスター手段として他のスケジューム側面を有する、再生の調節を行うことを可能にするという作用を有する。

[illegible][illegible]

各観面・再生装置の観面・再生制御を行うとともに、マトリックス・スイッチを制御することにより、個々の観面・再生装置および表示装置の入出力端子を増やすことなど、映像・音声信号の入出力を切替制御することを可能にするという作用を有する。

【0031】本発明の請求項18に記載の発明は、録音・再生システムに、計時手段と複数の映像・音声信号の入出力を切り替えるマトリックス・スイッチと、録音・再生装置間の割り当てのスケジュール・テーブルを有する各録音・再生装置と、複数の録音・再生装置を制御する制御手段と、複数の録音・再生装置を制御する制御手段と、各録音・再生装置に対応した割り当て手段とを具備し、録音・再生に基いて複数の映像・送信手段とを具備し、録音・再生に基いて複数の映像・再生装置間の録音・再生のスケジュールを組み、各録音・再生装置の制御して映像・音声信号の入出力を切替制御・スイッチを制御して映像・音声信号の入出力を切替制御する録音・再生制御装置と、放送番組の編成を行なう編成手段と、映像情報または音声情報を選択する映像・音声配座再生手段と、自己の識別コードを設定する識別コード設定手段とを備えた複数の録音・再生装置と、録音・再生制御装置からの制御信号を受けた受信部と受信部で受けた映像・再生制御装置からの制御信号を基にスイッチを制御して映像・音声の入力の切り替えを行なう制御手段とを有する表示装置とを少なくとも備えたものであり、複数の録音・再生装置同士または複数の録音・再生装置と表示装置間の映像・音声信号の入出力を録音・再生制御装置のマトリックス・スイッチで切替制御するに基いて予り作動図を行なうという作用を有する。

【0032】以下、本発明の実施の形態について、図1から図18を以下に説明する。

【0033】（実施の形態1）図1は本発明の第1の実施の形態における装置・再生制御装置と装置・再生装置の接続関係を示すブロック図、図2は本発明の第1の実施の形態における装置・再生制御装置の詳細な構成を示すブロック図、図3は本発明の第1の実施の形態における装置・再生装置の詳細な構成を示すブロック図、図4は本発明の第1の実施の形態における表示装置の詳細な構成を示すブロック図である。図1において、符号101は分配器、102～104は装置・再生装置、105は装置・再生制御装置、106は表示装置、110～113および118～120は制御信号を流す媒体、符号107は装置・再生制御装置、図2において、符号105は装置・再生制御装置、202は録画スケジュール管理部、203は操作入力部、204は表示部、211～213は信号線、図3において、符号301は装置・再生装置、302は制御ユニット駆動手段、303は受信部、304はチューナ、305は検出制御部、306は計時手段、307は再生手段、308はスイッチ、309は表示生成部、310は映像・音声信号線、

311～314および317～319は郵便番号、
16、320、323は普通番号、316、321、
322、324は映像番号、図4において、符号
322、324は映像番号、401は別
6は表示手段、401は別
受信部、403は表示制御部、404は音
05は文字生成部、406はスイ
示部、410、414～417、420、422は
番号、411～413は表
は普通番号、419、421は映像

【0034】以上のように構成された録画・再生制御装置、録画・再生装置、表示装置について、以下その動作を説明する。図1では3台の録画・再生装置を用いて予約録画を行う場合について示してある。図1を用いて先ず抽出に予約録画の動作を説明する。

【0035】CATVアンテナで受信した映像信号110（一般的には、映像信号、音声信号、データが多重化された信号であるが、ここでは順位のため映像信号と呼ぶこととする）は、分配器101で分配し再生線路111〜113を通じて各装置・再生装置に入力される。動画・再生制御装置105では、録画予約に必要な情報の他、映像・再生装置に関する情報を入力すると自動的に各装置・再生装置の動画予約のスケジュールを調整する。スケジュール調整結果を確認した後、信号線114〜116を介してそれぞれの映像予約の予約データを送信する。このときの映像予約の予約データを介して表7装置106に表示の印刷制御の指示を送り、映像番号118〜120の中から対応する映像・再生装置から映像信号を選択し、映像を表示して確認することが出来る。これらの信号線114〜117は理想的なものでも、実際には赤外光などによる無駄な使用も多い。録画・再生装置102〜104では予約した番組の開始時刻が来ると指定したチャンネルの映像、音声の録画を行う。

[illegible]

は、受け取った文字情報を映像信号に変換し映像信号線 322 に出力する。

【0037】また、機器制御部305では、録画・再生制御装置から受信した制御情報に基づいて倍音数318を介してスイッチ308の切替の指示を出し、これによりリスティング308では映像・音声記録再生部307から映像信号322または映像・音声記録再生部307から出力される映像信号321および音声信号320の内蔵するものを映像信号324、音声信号323に出力する。さらに、機器制御部305では、倍音数313を介して倍音数306に機器制御部および倍音時刻を数定する。計時部306ではそれぞれ時刻について現在時刻から一定値を算算することと時間を計時し、数に0になる信号313を介して機器制御部に通知する。機器制御部305では、録画開始時刻の通知が来ると映像・音声記録再生部307に倍音数317を介して録画指示を送り、機器計時時刻の通知が来ると映像・音声記録再生部307に倍音数317を介して停止の指示を送る。録画の際には機器制御部305から倍音数314を介してチューナー304に対して指定したチャネルの数の指示が送られ、これに基づいて、チューナー304から映像信号310からの映像信号316および音声信号315を分離して映像信号316および音声信号315を出力する。

【0038】また、このときの表示装置の動作について、図4を用いて説明する。表示装置106では、録画・再生装置と同様にして予め識別コード設定手段401による装置の識別のための識別コードを設定する。受信部402では、録画・再生制御装置から送られてきた識別コードと設定した識別コードとを比較し、受信した制御情報が自身に充てられたものであると判断するとその内容を倍音数414を介して表示制御部414へ送り、表示制御部414では各録画・再生装置から映像・音声信号411〜413の内蔵するものを映像信号419、音声信号418に出力する。映像表示部407では映像信号419の映像をモニターに表示し、音声出力部404では音声信号418の音声を再生出力する。

【039】（実施の形態2）図1は本発明の第2の実施の形態における縁面・再生制御装置の構成を示す図、図2は本発明の第2の実施の形態における縁面・再生装置の構成を示す図である。本発明の第2の実施の形態における縁面・再生制御装置と縁面・再生装置、表示装置の接続関係は本発明の第1の実施の形態の図1と同様である。

あり、表示装置の構成についても第1の実施形態の図2に
4と同様である。また、画面・再生制御装置の構成につ
いては、図2の送受信部201が図5で送受信部501とな
っていることを除けば、第1の実施形態の図2と等しい
として、図3の構成については、図3の受信部3
と、画面・再生装置の構成は、図3の送信部3
03と図6では受信部603となっている。図7には本発明の第2
の実施形態の図8と同様である。図7には本発明の第2
の実施形態の図8における画面・再生制御装置と各画面・再
生装置との間における制御情報のやりとりを示した図で
ある。図5の501は送受信部、502は画面メニューセ
ール管理部、503は操作入力部、504は表示部、5
11～513は音声号線、図6の601は画面・生成装
置、602は識別コード受付手段、603は受信部、6
04はデューア、605は強制制御部、606は1対1手
段、607は映像・音声配分再生部、608はスプ
チ、609は文生生成部、6001はディープコピー抽出
部、610は映像・音声信号線、611～614および
617～619、631は制御情報線、615、62
0、623は音声号線、616、621、622、6
24は制御情報線を表す。

[illegible][illegible]

を操作する力部で指定する。録画スケジュール管理部502では、予約された番組の長さ、時間帯、録画の面数、各番組、再生装置のグループの種類、録画可能容量等から、再生装置に録画面数や録画モードを割り振る。録画スケジュール管理部502で割り振った結果を表示部504の表示または表示装置の表示により確認し、修正が必要であれば必要事項を修正する。操作力部503で紹介する録画スケジュールの内容の確認を受け付ける。信号線513を介して録画スケジュール管理部502に通知する。録画スケジュール管理部502で決定した各番組、再生装置毎の録画予約データを信号線511を介して送受信部501へ送り、送受信部501では各番組、再生装置毎の制御コマンドを録画・再生装置へ送信する。同一機間でのユーザの別な受信を避けるため装置の識別IDが設定されている場合にはその識別IDを付けて送信される。

【0042】このときの録画・再生装置の動作について図6を用いて説明する。送受信部603では、録画・再生制御装置から送られてきた録画予約情報制御部1に関する制御情報622を受信すると、制御部1が設定手段604から信令線612を介して受け取った識別コードを識別し、受信した制御情報が自身に充てられたものであると判断するとその内容を信令線612を介して機器制御部605へ送す。ここで、録画・再生装置が複数の場合、特定の装置に対してのみ制御と送るための識別コードを識別コード602で他の装置との識別のためにユーザがユーザメニュー画面からの選択で行う。機器制御部605も同様の設定を行う。識別コードの設定はDIPスイッチでは受信メッセージを介し、メディア種類別外出せ（装置情報要求メッセージ）の場合、メディア種類6001から信令線613を介して受け取った現在装着しているテープの種類の情報、映像・音声記録再生部607から信令線617を介して受け取ったテープの種類可能情報、機器制御部605内のメモリに保持している録画予約状況等の録画・再生装置間の情報を装置情報通知メッセージとして信令線612を介して送受信部603に渡す。送受信部603はこれを録画・再生制御装置1に送り通知する。

【0043】また、機器制御部605では受信メッセージが画面下部収容の場合、画面予約データ等を内部メモリに保持するとともに信号番号19を介して文字生成部609へ送る。文字生成部609では、受け取った文字情報を映像信号21に変換し映像信号62.2に出力する。また、機器制御部605では、画面・再生制御装置から、映像情報に基づいて信号番号18を介してスイッチ608の切替の指示を出し、これによりスイッチ608では文字生成部609から出力される映像信号52.2または映像・音訳再生部607から出力される映像信号62.1および音訳再生部62.0の内容当りものを映像信号62.2および音訳信号62.3に出力する。さらに、映像信号62.4、音訳信号62.5を出力する。

制御部605では、信号線613を介して計時手段606に、制御開始および終了時刻を規定する、計時手段606で得た、それぞれの時刻について現在時刻との差を計算するに保持した単位時間メモリからの値から一定値を減算することによって時間を計時し、差が0になった。信号線613を介して機器制御部608に通知する。機器制御部605では、制御開始時刻の通知を受け取る映像・音配再生手段607に信号線617を介して制御指示を送り、機器計時時刻の通知が来ると映像・音配制御再生部607に信号線617を介して停止の指示を送る。映画の際には機器制御部605から信号線614を介してチューナー604に対して指定したチャネルの配定の指示が送られ、これに基づいて、チューナー604では映像・信号線610からの映像信号の内指定のチャネルの映像を分離して映像信号線616および音信号線615へ、それぞれ映像信号および音信号を出力する。

[0044] なお、このときの表示装置の動作については本発明の実施の形態1の説明と同様であるので説明を省略する。

【0045】ここで、図7を用いて録画・再生制御装置と各録画・再生装置との間で送受信されるメッセージにそれぞれ説明する。図7は、録画・再生装置1～3に対して送られる送信識別コードID1～ID3が決定されたものである。図8は、録画・再生装置1において、録画・再生制御装置は、新たな録画予約が与えられる場合の送信メッセージの例を示している。この場合生じた場合、装置情報要求メッセージ（0内のフィールドには装置識別コード）を各録画・再生装置に送信し必要装置に関する番組の録画予約のスケジュールリングに必要な情報と同一く合わせる。各録画・再生装置は装置情報通知メッセージ（0内のフィールドには1装置識別コード、装置情報）を録画・再生制御装置へ送り、現在装着されているテープの種類、テープの録画可能容量、録画予約状況等の録画・再生装置間の情報を提供する。これによりユーザーが録画・再生制御装置へ入ける手間が省ける。録画・再生制御装置は、これらの情報を基に各録画予約のメタデータを組み、各録画・再生装置に録画予約要求メッセージを送信する。録画予約要求メッセージの0内の各フィールドにはそれぞれ装置識別コード、チャネル、録画開始日時、録画終了日時、録画モードを表している。すなわち、録画・再生制御装置からの録画予約要求（ID1、TV1、TS1、TS2、N）、メッセージでは録画・再生装置1に対して地上放送のTV1チャンネル、開始日時T1から終了日時T2までの録画で録画モード、リアル（N）で録画するように要求して受け付けたことを確認する通知メッセージが返る。以下同様録画・再生装置2、3に対して録画予約要求メッセージを送員し、各々の装置データから録画予約が付付けられている。途中で予約を変更したい場合も同様に録画予約要

変更要求メッセージに対して録画予約変更受付メッセージを返すことにより確認が行われる。このように録画・再生制御装置と録画・再生装置間で方向性の通信機構を組み込むことにより、例えば、録画・再生装置が故障して予約受付メッセージが返って来ない場合や、録画終了時間が過ぎても録画終了通知が返ってこないなどの場合に、再生装置に誤りを与えるなどの再スケジュールング処理が行われ、録画の失敗を回避出来る。

【0046】(実施の形態3) 図1は本発明の第3の実施の形態における録画・再生装置の構成を示す図、図2は本発明の第3の実施の形態における録画・再生制御装置と録画・再生装置、表示装置の接続関係を示す図、図3は本発明の第3の実施の形態における録画・再生のスケジュールを説明するための図である。図3中の録画・再生制御装置805の内部構成については本発明の第1の実施の形態における図2の録画・再生装置806の構成を示す図と同様であり、図3中の表示装置806の内側に、録画・再生装置805は映像・音声信号を流す映像・音声信号線、814～825は映像・音声信号を流す映像・音声信号線、814～817および826は制御信号線、図3の701は録画・再生装置、702は識別コード設定手段、703は受信部、704はチューナ、705は機器制御部、706は計時手段、707は映像・音声信号線、708はスイッチ、709は文字生成部、710および711～719、720、721～723は音声信号線、716、721、722、724は映像信号線を示す。

【0047】以上のように構成された録画・再生制御装置、録画・再生装置、表示装置について、以下その動作を説明する。図9では3台の録画・再生装置を用いて相互に連携して予約録画を行う場合の構成を示す図で、本実施の形態では各録画・再生装置802～804および表示装置806は受信機として機能しないものとする。図9を用いて、まず簡単にその動作を説明する。CATVやアンテナで受信した映像信号810は、分配器801で分配され信号線811～813を介して各録画・再生装置に入力されている。録画・再生制御装置805では、録画予約に必要な情報の他各録画・再生装置に関する情報を入力すると自動的に各録画・再生装置の録画予約のスケジュールを調整する。スケジュール調整結果を確認した後、信号線814～816を介して各録画・再生装置に録画予約データを送信する。このときの録画予約状況は信号線826を介して表示装置806に表示の切替制御の指示を送り、映像信号819、822、825のなかから対応する録画・再生装置からの映像信号を選択

し、映像を表示して視聴すること出来る。これらの信号線819、822、825は仮想的なもので、実際にほか外などによる接続を使用してもよい。録画・再生装置802～804では予約した番組の開始時刻が来る時刻にチャネルの映像・音声の録画を開始する。【0048】各録画・再生装置の映像・音声出力は、図9のように他の2台の録画・再生装置の入力端子に接続されているので、任意の2台の録画・再生装置間で映像・音声のコピーをすることが可能になっている。この機能を利用して、最終的に同じシリーズに録画したい場合など(連続ドラマなど)を同じシリーズに録画したい場合などは、録画・再生制御装置805が一時的にある録画・再生装置で録画しておき、望んでいる時間に目的の録画・再生装置へ差し替えるようスケジュールを組み、各録画・再生装置の映像・音声の入出力の制御を行い自動的に録画まで行う。

【0049】ここで、録画・再生制御装置の動作についてさらに詳しく説明する。図9中の録画・再生制御装置805の内部構成については図2の録画・再生制御装置の構成を示す図と同様なので、図2を用いて説明する。図2の録画・再生制御装置において、操作入力部203は電源オン・オフ、録画、再生、停止等の録画・再生装置の制御用のボタン、モニター表示の切替、録画・再生装置の指定のためのボタン、番組や録画予約日時を指定するための10キーなどからなり、表示部204の表示に従って各録画・再生装置の映像、音声、映像メディアの装着の有無、装着されている録画メディアの録画可能時間または容量、装着されている録画メディアの残容量時間または容量、装着されている録画メディアの種類、録画チャネルや録画時間を含む録画予約情報、録画・再生装置間の接続状態、録画・再生装置と表示装置間の接続状態および録画の際の画質等の録画スケジュール構成のための情報を入力する。また、送信先の装置の識別コード設定手段で識別コードを設定する場合、それぞれの装置毎に設定した識別コードに対応する識別コードを設定しておく。入力されたこれらのデータはメモリに記憶され録画スケジュール管理部202でのスケジュール作成に使用される。

【0050】メモリにはまた、各録画・再生装置の制御コードが予め登録されており、予め対応する装置の制御コードを操作入力部で指定する。また、予め各録画・再生装置間の接続状態についても操作入力部で指定しておく。録画スケジュール管理部202では、予約された番組の長さ、時間帯、録画の画質、各録画・再生装置のグループの構成、録画可能容量等から、各装置毎に録画番組や録画モードを割り振る。録画スケジュール管理部202で割り振った結果を表示部204の表示または表示装置の表示により確認し、修正が必要であれば必要事項を修正する。操作入力部203で録画予約内容の確認を受

時刻の通知が来ると映像・音声記録再生部707に信号線717を介して停止の指示を送る。再生開始通知、再生終了通知を受け取った場合は同時に信号線717を介して映像・音声記録再生部707にそれぞれ再生指示、停止の指示を送る。映像・音声記録再生部707では、録画指示を受け取る映像信号線721および音声信号線720の映像・音声の録画を開始し停止の指示により録画を終了する。また、映像・音声記録再生部707では、機器制御部705から信号線717を介して再生の指示を受けた場合、指定の位置までテープを巻き戻し、または受けて出しを行い再生を開始し、停止の指示で再生を終了する。なお、他の録画・再生装置と連動して録画を行う場合、共通の同期信号とタイムコードの制御を行うことで録画の精度を上げることができるとは言ってもよい。

【0055】録画の対象がチューナ704からの番組の場合、機器制御部705では信号線714を介してチューナ704に対して指定したチャネルの設定の指示を送り、これに基づいて、チューナ704では映像信号線710からの映像信号の内指定のチャネルの映像を分離して映像信号線716および音声信号線715へそれぞれ映像信号および音声信号を出力する。なお、他1の説明と同様であるので説明を省略する。

【0056】ここで、図11を用いて3台の録画・再生装置を使用した録画予約のスケジュールングの方法の例を説明する。図11の上には、録画予約する番組およびそれを放送しているチャネルと放送時刻の関係を示している。便宜上録画予約する番組に(1)～(7)の番号をふってあり、同じハッチングを施したものは同一シリーズの番組(連続ドラマ等、この例では(1)～(3)と(4)と(5))を表す。また録画・再生装置1～3には同じ容量のテープが装着されているものとす。録画予約する番組がこのような関係にある場合、録画スケジュール管理部502では、先ず録画・再生装置1に対して(1)の番組の録画予約を割当て、次に同じ時間帯にある(4)、(6)、(7)を3台の録画・再生装置1～3にそれぞれ録画予約を割当てる。次に(4)と(7)の録画が終了し、その後(2)の録画が始まるまでの間で録画・再生装置1に録画した(7)の番組を再生し、これを録画・再生装置3にコピーするよう録画・再生装置1に(2)、(3)の番組の予約にそれぞれ別の装置に再生および録画の予約を割当てる。さらに録画・再生装置1に(2)、(3)の番組の録画予約を、録画・再生装置2に(5)の番組の録画予約をそれぞれ割当てる。これによりシリーズの番組を同一テープに収録することが出来る他、テープの録画時間を最大限に利用することが可能となる。

【0057】(実施の形態4) 図1は本発明の第4の実施の形態における録画・再生制御装置と録画・再生装置、表示装置の接続関係を示す図、図2は本発明の第4

の実施の形態における図面、平生師仰装置の構成を示す図、図₃は本発明の第4の実施の形態における図面、平生装置における表示装置の構成を示す図、図₄は本発明の第4の実施の形態における図面、平生師仰装置と導面、平生装置、表示装置の接続関係および導面、平生師仰装置の構成、表示装置の構成、表示装置の構成は本発明の第1の実施の形態におけるそれと同様であり、導面、平生装置の実施の形態におけるその動作についても第1の実施の形態と同様である。

[illegible]

【0059】そこで、本実施の形態では、予め各装置に再生装置と表示装置の接続関係と操作入力部203から入力しておき、操作入力部203から受得た装置識別番号を指定して再生の指示をした時に、装置識別番号と表示装置100で受得た装置識別番号とを照合し、一致する場合には、表示装置100で受得た装置識別番号を選択して表示させるように指示を行うように構成されている。

[0060] (変換の形態5) 図9は本発明の第5の変換の形態における後面・再生側装置と前面・再生装置の接続関係を示す図、図10は本発明の第5の変換の形態における後面・再生装置の構成を示す図、図11は本発明の第5の変換の形態における後面・再生のスケジューを説明するための図である。図9中、再生側の後面装置805の内部構成については本発明の第2の変換の形態における図5の後面・再生側装置と同様であり、図9中の表示装置806の内部構成については本発明の第1の変換の形態(図1)と同様であり、図9中の表示装置の構成を示す図10同様である。図9中の後面装置805の内部構成については本発明の第2の変換の形態における図5の後面・再生側装置と同様であり、図9中の表示装置806の内部構成については本発明の第1の変換の形態(図1)と同様であり、図9中の表示装置の構成を示す図10同様である。

【0084】図5の画面、再生制御装置において、操作入力部503から表示部504の表示に依って画面140の表示は、番組の画面140に必要な、チャンネル、開始時刻、終了時刻および番組の間のデータの他、使用する番組、再生装置の台数等のデータを入力する。各番組、再生装置が装着しているデータの種類、およびデータの画面可能枚数等のデータについては双方通信機へ原本値1を介して送受信部501を介して各番組・再生装置の画面に生かし、送受信部502を介して各番組・再生装置の画面に設定手段で識別コードを指定する場合、それら各識別コードに設定手段で識別コードを指定する場合は、メモリを指定しておく。入力されたこれらのデータは、メモリ内の装置部に設定した識別コードに対する識別コードの装置の識別コードが予め登録されており、予め対応する装置の識別コードを操作入力部で指定する。また、予め装置の識別コードを操作入力部で指定する。また、予め各番組、再生装置間の接続状態について操作入力部で指定しておく。

【0085】録画スケジューリング管理画面502では、予約された番組の長さ、時間帯、録画の面数、各録画・再生装置のテープの個数、録画可能容量、各録画・再生装置間の接続状態等から、各装置毎に録画番組や録画モードを割り振り、録画スケジュール管理画面502で割り振った結果を表示部504の表示または装置設置の表示により確認し、修正が必要であれば必要事項を修正する。操作入力部503で録画予約内容の確認を受け付けることと通知され、録画スケジューリング管理画面502にて各装置、録画スケジュール管理画面502で決定した各録画・再生装置毎の録画予約データを入力部511を紹介して送受信部501へ送り、送受信部501では各装置へ、再生装置毎の制御コードを録画・再生装置へ送信する。同一機種の同一コードの録画受信を避けるため装置の識別コードが格納されている場合はその識別コードを付けて送信される。

【0066】このときの録画・再生装置の動作については、図10を用いて説明する。送受信部903では、録画・再生制御部904から送られてきた録画予約や機器制御信号に関する制御情報425を受信する。録画予約コード設定手段902から情報番号9222を介して受け取った識別コードを認識し、受信した制御情報425自身に示されたものであると判断するとその内容を番号9012を介して機器制御部905へ送す。ここで、録画・再生装置が故障の場合、特定の装置に対してのみ制御情報を送るために予約識別コード設定手段9022で他の装置との識別するためのコードを設定しておく。この場合、録画・再生制御部904でも同様の設定を行う。この場合、識別はD1プレイスチーモニュー画面一面からの識別で行う。

【0067】機器制御部905では受信メッセージが最
面・再生装置側の情報の間い合わせ（装置情報要求メッ
セージ）の場合、メディア種別検出部9001から信号

線9031を介して受け取った現在装着しているテープの種類の情報、映像・音声再生部9070から番号線9017を介して受け取ったテープの録画可能容量、機説明線9059内のメモリに保持している録画予約状況とその録画・再生装置内の情報と装置情報通知ケーブル等によって番号線9012を介して受信番号903に通知する。送受信部903はこれを録画・再生制御装置1に送り通知する。また、機説明線9055では受信メッセージが録画予約要求の場合、録画予約テープ等を内部メモリに保持する。文字生成部909では、受け取った文字情報を映像信号に変換し映像信号線9022に出力する。

【0068】また、機器制御部905では、録画・再生制御装置4からの制御情報や映像メニューに基づいて、信号線918を介してスイッチング908の切替の指示を出し、これによりスイッチング908では文字生成部909から出力される映像信号922または映像・音声記録再生部907から出力される映像信号924および音声信号923の内該当するものを映像・音声信号線928～930のいずれかに導出す映像・音声信号線928～930を介して時域手段906に映像開始、終了時刻や再生開始、終了時刻を設定する。計時手段906ではそれ、その時刻について現在の時刻との差をメモリに保持し、単位時間毎にメモリの値から一定値を減算することや時域手段906に通知する。機器制御部905では、映像開始時刻の通知を受け取る。と番号線932からしてスイッチング900に切替の指示を出し、スイッチング900ではこの切替の指示により、録画メニューに基づいてチューナー904からの映像信号916と音声信号915か、他の2台の録画・再生装置からの映像・音声信号92、927の内のいずれか一組を選択し、映像信号線921、および音声信号線920に出力する。

[illegible]

の80.1は分祀屋、80.2～80.4は縁部・再生装置、80.5は縁部・再生防雨装置、80.6は表示装置、81.0～81.3および81.7～82.5は映像・音声符号を流す映像・音声符号線、81.4～81.7および82.6は別個信号線、図10の90.1は縁部・再生装置、90.2は映像・音声符号線、90.3は受信信号線、90.4はデジタルコード配線手段、90.5は受信回路、90.6は映像符号線、90.7は映像・音声は線形部制御、90.8は計時手段、90.9は映像・音声部再生部、90.91はメディア制御演出部、91.0および92.6～93.0は映像・音声符号線、91.1～91.4および91.7～91.9、92.3、93.2は映像符号線、91.5、92.0、92.3は音声符号線、91.6、92.1、92.2、92.4は映像信号線を表す。

[0061] 以上のように構成された録画・再生装置を用いて、本実施例を説明する。図9では3台の録画・表示装置を用意して、相互に連携して予知映画を行う場合の構成を示すので、それぞれ異なる形態では録画・再生装置802～804および録画・再生制御装置805はそれぞれ送受信機能を持つ。図9を用いて先ず簡単にその動作を説明する。CAM1でアクションシーンを撮影した映像信号810は、分配器807を介して分配され、映像信号811～813を介して各録画・再生装置に入力されている。録画・再生装置に入力される映像信号には、録画予約に必要な情報の他、録画・再生装置に使用される情報を入力すると自動的に各録画・再生装置の映画選択部が、映像を選択し、映像を送信することが出来る。これらにより、25の中から対応する録画・再生装置からの映像信号を含む、映像予約の視聴順序の指示を選び、映像信号819、822、825のうちのいずれか1つ、822、825は受動的なもので、映画際には赤外光などによる無線を使用してもよい。録画・再生装置802～804のうち予約した番組の開始時刻が他の2台の録画・再生装置より遅い場合は、録画・再生装置802～804は予約したチャンネルの映像、音声の録画を行う。[0092] 各録画・再生装置の映像・音声出力は、図10のように他の2台の録画・再生装置への端子に接続されていることで、任意の2台の録画・再生装置間で映像・音声のコピーをとることが可能になっている。この映像・音声を利用して、最終的に同じシリーズで放映される番組と同じテープに録画したい場合などでは、録画・再生制御装置805が一時的にある録画・再生装置で録画してしまっても、望みの時間・目的の録画・再生装置へ早送りするとき、望みのスクエージュを組み、各録画・再生装置の映像・音声の出力の制御を行い、自動的に編集まで行う。

【0063】ここで、録画・再生制御装置の動作についてさらに詳しく説明する。図9中の録画・再生制御装置805の内部構成については図5の録画・再生制御装置の構成を示す図と同様なので、図5を用いて説明する。

308では、この切替の指示に基づいて文字生成部1309からの映像出力1322を表示装置に接続されている映像信号線に出力する。受信部1303から信号線1312を介して録画スケジュールの確認を受けると、録画スケジュール管理・機器制御部1305では決定した各録画・再生装置毎の録画予約内容や内部メモリに保持する。

【0081】録画スケジュール管理・機器制御部1305では、このようにリモート制御装置からの制御情報や録画スケジュールに基づいて信号線1318を介してスイッチ1308の切替の指示を出し、これによりスイッチ1308では文字生成部1309から出力される映像データ1308または映像・音声信号線1307から出力される映像信号1324および音声信号1323の内該当するものを映像・音声信号線1328～1330のいずれか適当する映像・音声信号線に出力する。

【0082】さらに、録画スケジュール管理・機器制御部1305では、信号線1313を介して計時手段1306に各録画・再生装置毎の録画開始、終了時刻や再生開始、終了時刻を設定する。計時手段1306ではそれぞれ時刻について現在の時刻とを差をメモリに保持し単位時間毎にメモリの値から一定値を減算することであり、差が0になると信号線1313を介して録画スケジュール管理・機器制御部1305に通知する。

【0083】録画スケジュール管理・機器制御部1305では、計時手段1306からの通知を受け取ると、マスター側録画・再生装置に対するものかスレーブ側録画・再生装置に対するものかを判断し、スレーブ側録画・再生装置に対するものである場合、受信部1300開始・終了、再生開始・終了、表示制御等の指示を送る。また、マスター側録画・再生装置に対するものである場合、録画開始時刻の通知を受け取ると、信号線1332を介してスイッチ1300に切替の指示を出し、スイッチ1300ではこの切替の指示により、録画スケジュールに基づいてチューナー1304からの映像信号1316と音声信号1315、他の2台の録画・再生装置からの映像・音声信号1333、1334の内いずれか一組を選択し、映像信号線1321および音声信号線1320に出力する。

【0084】また、これと同時に、録画スケジュール管理・機器制御部1305では映像・音声記録再生部1307に信号線1317を介して録画指示を送り、録画終了時刻の通知が来ると映像・音声記録再生部1307に信号線1317を介して停止の指示を送る。再生開始通知、再生終了通知を受け取った場合も同様に信号線1317を介して映像・音声記録再生部1307にそれぞれ再生指示、停止の指示を送る。映像・音声記録再生部1307では、録画指示を受け取ると映像信号線1321および音声信号線1320の映像・音声の録画を開始し

1203から表示部1204の表示に従って録画予約したい番組の録画予約に必要な、チャンネル、開始時刻、終了時刻および録画の間の面等のデータを入力する。また、予め使用する録画・再生装置の台数や装置間の接続状態について操作入力部1203から指定しておく。入力されたこれらのデータは、制御部1202で適宜マスター側録画・再生装置の制御用メッセージとして信号線1211を介して送信部へ送られ、送信部1201からマスター側録画・再生装置へ送られる。これを基にマスター側録画・再生装置で作成した録画スケジュールを表示装置の表示により確認し、修正が必要であれば操作入力部1203から必要事項を修正し、良ければ確認を入力する。操作入力部503で録画予約内容の確認を受け付けると信号線1218を介して制御部1202へ通知し、制御部1202ではこれを受けマスタ側へ録画・再生装置の制御用メッセージとして信号線1211を介して送信部へ送り、受信部1201ではマスター側録画・再生装置へ送付する。

【0079】このときのマスター側録画・再生装置1102の動作について図11を用いて説明する。図11は、メディア型別抽出部13001では、録画・再生装置内のテープの装荷の有無、装着されているテープの種類（録画時間など）を検出する。また、映像・音声記録再生部1307では映像信号に同期して記録してあるコントロール信号を基に現在のテープの位置を検出する。録画スケジュール管理・機器制御部1305では、これらの情報を信号線1331および信号線1317を介してテープの種類、およびテープの録画可能残量等の情報に取得するとともに、各録画・再生装置が装着しているテープの種類の、およびテープの録画可能残量等の情報について、予め定められた通信プロトコルに基づいて受信部13002、信号線1327を基にして各録画・再生装置へ順次問い合わせる情報を取出し、それらを内部のメモリに記録する。

【0080】さらに、録画スケジュール管理・機器制御部1305では、受信部1303でリモート制御装置から受信した、使用する録画・再生装置の台数や装置間の接続状態の他、録画予約したい番組のチャンネル、開始時刻、終了時刻および録画の間の面等の情報を信号線1312を介して取得する。新しい録画予約を受け付ける毎に、予約された番組の長さ、時間帯、録画の面数、各録画・再生装置のテープの装荷の有無、テープの種類、録画可能残量（現在のテープ位置から算出した値またはリモート制御装置から受け取った情報）、各録画・再生装置間の接続状態等から、各装置毎に録画予約や録画モードを割り振り、その結果を文字コードにして信号線1319に出力する。文字生成部1309ではこの文字コードから各装置毎の映像信号に変換して映像信号線1322に出力する。録画スケジュール管理・機器制御部1305では、これと同時にスイッチ1308に対して信号線1318を介して切替の指示を行い、スイッチ1

300はスイッチ、14001はメディア型別抽出部、1410、1426～1430は映像・音声信号線、1411～1412、1414および1417～1419、1431～1434は制御信号線、1415、1420、1423は音声信号線、1416、1421、1424は映像信号線を表す。

【0075】以上のように構成された録画・再生制御装置、録画・再生装置、表示装置について、以下その動作を説明する。図12では3台の録画・再生装置を用いて相互に連携して予約録画を行う場合の構成を示してある。図12を用いて先づ簡単にその動作を説明する。

【0076】CATVやアンテナで受信した映像信号1110は、分配器1101で分配され信号線1111～1113を介して各録画・再生装置に入力されている。リモート制御装置1105からは、録画予約に必要な情報（他各録画・再生装置に関する情報を入力する。リモート制御装置1105からは、まとまった単位で信号線1114を介してマスター側録画・再生装置1102に録画予約データや制御情報を送信する。この信号線1114は伝送的なもので、実際には光ファイバなどによる無線を使用してもよい。マスター側録画・再生装置1102では、リモート制御装置1105から受け取った予約情報等から録画スケジュールを組み、このときの録画予約内容を映像信号線1118に出力するとともに信号線1115を介して表示装置1106に表示の切替制御の指示を送りスケジュール調整結果を映像として表示する。表示されたスケジュール調整結果が問題なければ、リモート制御装置1105から調整通知をマスター側録画・再生装置1102に送信する。マスター側録画・再生装置1102ではこの結果を受けて、内部の計時手段を用いてスケジュール管理を行い、指定の時刻が来ると、自身および録画・再生装置1102～1104に信号線1115を介して録画開始・終了、再生開始・終了の指示を行う。録画・再生装置1102～1104ではこれらの指示に基づき、指定された映像・音声の録画、再生を行う。

【0077】各録画・再生装置の映像・音声出力は、図のように他の2台の録画・再生装置の入力端子に接続されているので、任意の2台の録画・再生装置間で映像・音声のコピーをとることが可能になっている。この機能を利用して、最終的に同じシリーズで放映される番組を同じテープに録画したい場合などでは、マスター側録画・再生装置1102が一時的にある録画・再生装置で録画しておき、空いている時間に目的の録画・再生装置へ写し替えるようスケジュールを組み、各録画・再生装置の映像・音声の入出力の制御を行い自動的に編集まで行うことも可能である。

【0078】ここで先づ、リモート制御装置1105の動作について図13を用いてさらに詳しく説明する。図13のリモート制御装置1105において、操作入力部

けることができることは言うまでもない。

【0071】録画の対象がチューナー904からの番組の場合、機器制御部905では信号線914を介してチューナー904に対して指定したチャンネルの設定の指示を送り、これに基づいて、チューナー904では映像信号線910からの映像信号の内指定のチャンネルの映像を分離して映像信号線916および音声信号線915へそれぞれ映像信号および音声信号を出力する。なお、このときの表示装置の動作については本発明の実施の形態1の説明と同様であるので説明を省略する。

【0072】ここで、実施の形態3において図11を用いて説明したと同様なスケジュール制御を行うことにより、本発明によれば、複数の録画・再生装置で個別に録画を行うだけでは実現できない、複数の録画・再生装置の録画・再生機能をフルに生かした効率的な録画・編集作業が実現できる。

【0073】（実施の形態6）図12は本発明の第6の実施の形態におけるリモート制御装置、マスター側録画・再生装置、スレーブ側録画・再生装置、表示装置の接続関係を示す図。図13は本発明の第6の実施の形態におけるリモート制御装置の構成を示す図。図14は本発明の第6の実施の形態におけるマスター側録画・再生装置の構成を示す図。図15は本発明の第6の実施の形態におけるスレーブ側録画・再生装置の構成を示す図である。図12中の表示装置1106の内構成については本発明の第1の実施の形態における図4の表示装置の構成を示す図と同様である。

【0074】図12において、符号1101は分配器、1102～1104は録画・再生装置、1105はリモート制御装置、1106は表示装置、1110～1113および1116～1124は映像・音声信号線を表す。映像・音声信号線、1114、1115は制御信号線、図13において、符号1201は送信部、1202は制御部、1203は操作入力部、1204は表示部、1215はリモート制御装置、1211～1213は信号線、図14において、符号1301はマスター側録画・再生装置、1302は制御部、1303は映像・音声信号線、1304はチューナー、1305は録画スケジュール管理・機器制御部、1306は計時手段、1307は映像・音声記録再生部、1308はスイッチ、1309は文字生成部、1300は送信部、13001はメディア型別抽出部、13002は受信部、1310、1328～1330、1333、1334は映像・音声信号線、1311～1314および1317～1319、1326、1327、1331、1332は制御信号線、1315、1320、1323は音声信号線、1316、1321、1322、1324は映像信号線、図15において、符号1401はスレーブ側録画・再生装置、1404はチューナー、1405は機器制御部、1407は映像・音声記録再生部、1408はスイッチ、1

06に各録画・再生装置毎の録画開始、終了時刻や再生開始、終了時刻を設定する。計時手段1606ではそれぞれ時刻について現在の時刻との差をメモリに保持し、単位時間毎にメモリの値から一定値を減算することで時間を計時し、差が0になると信号線1613を介して録画スケジュール管理・機器制御部1605に通知する。

[1009]録画スケジュール管理・機器制御部1605では、計時手段1606からの通知を受け取り、送受信部16002、信号線1627を經由して当該録画・再生装置へ録画開始、終了、再生開始、終了、表示制御等の指示を送る。また、信号線1618を介してスイッチ1608に切替の指示を出し、スイッチ1608ではこの切替の指示により、録画スケジュールに基づいて内部マトリックス・スイッチを切り替えて、映像・音声入力1632～1635をそれぞれ対応する映像・音声出力1624、1636～1639に接続する。また、これと同時に、録画スケジュール管理・機器制御部1605では送受信部16002、信号線1627を經由して当該録画・再生装置に録画指示を送り、録画終了時刻の通知が来ると停止の指示を送る。再生開始通知、再生終了通知を受け取った場合も同様信号線1627を經由して当該録画・再生装置にそれぞれ再生指示、停止の指示を送る。なお、他の録画・再生装置と連動して録画を行う場合、共通の同期信号とタイムコードの制御を行うことで録画の精度を上げることができるとは言うまでもない。

[1010]次に、録画・再生装置1502～1505の動作について図118を用いてさらに詳しく説明する。図118で、メディア駆動部17001では、録画・再生装置内のテープの装着の有無、装着されているテープの種類（録画時間など）を検出する。また、映像・音声記録再生部1707では映像信号に同期して記録してあるコントロール信号を基に現在のテープの位置を検出する。機器制御部1705では、これらの情報を基に、信号線1731および信号線1717を介して取得するとも、信号線1734、送受信部17002、信号線1733を經由して録画・再生制御装置からの問い合わせがあると、予め定められた通信プロトコルに基づいてこれらの情報を提供する。

[1011]また、機器制御部1705では録画・再生制御装置からの表示制御の指示に基づいて信号線1732を介してスイッチ1700の切替の指示を出し、これによりスイッチ1708では映像・音声記録再生部1407から出力される映像信号1424および音声信号1423を映像・音声信号線1428～1430のいずれか該当する映像・音声信号線に出力する。

[1012]さらに、機器制御部1705では、信号線1734、送受信部17002、信号線1733を經由して録画・再生制御装置から録画開始の指示を受け取ると、信号線1732を介してスイッチ1700に切替の

指示を出し、スイッチ1700ではこの切替の指示により、チューナー1704からの映像信号1716と音声信号1715、他の録画・再生装置からの映像・音声信号1726の内の任意の入力信号を、映像信号線1721および音声信号線1720に出力する。また、これと同時に、機器制御部1705では映像・音声記録再生部1707に信号線1717を介して録画指示を送り、マスター側録画・再生装置から録画終了の指示が来ると映像・音声記録再生部1707に信号線1717を介して停止の指示を送る。再生開始通知、再生終了通知を受け取った場合も同様信号線1717を介して映像・音声記録再生部1707にそれぞれ再生指示、停止の指示を送る。

[1013]映像・音声記録再生部1707では、録画指示を受け取ると映像信号線1721および音声信号線1720の映像・音声の録画を開始し、停止の指示により録画を終了する。また、映像・音声記録再生部1707では、機器制御部1705から信号線1717を介して再生の指示を受けた場合、指定の位置までテープを巻戻し、または送って頭出しを行い再生を開始し、停止の指示で再生を終了する。また、マスター側録画・再生装置からチューナーからの番組録画の指示が来た場合、機器制御部1705では信号線1714を介してチューナー1704に対して指定されたチャネルの設定の指示を送り、これに基づいて、チューナー1704では映像信号線1710からの映像信号の内指定のチャネルの映像を分離して映像信号線1716および音声信号線1715を分離して映像信号および音声信号を出力する。なお、リモート制御装置1506の動作および表示装置1508の動作については実施の形態5と同様なので省略する。

[1014]ここで、実施の形態3において10図を使って説明したのと同様なスケジュール制御を行うことにより、本発明によれば、複数の録画・再生装置で個別に録画を行うだけでは実現できない、複数の録画・再生装置の録画・再生機能をフルに生かした効率的な録画・編集作業が実現できる。

[1015]
[発明の効果] 以上のように、本発明を用いることにより、第1に、複数の録画・再生装置の機能や、性能、装着するメディアの状況などの情報を総合する事により、よりきめ細かい録画予約のスケジュールリングを行うことが可能となる。

[1016]第2に、録画・再生装置と録画・再生制御装置がそれぞれ双方方向の通信が可能な通信手段を具備することにより、複数の録画・再生装置の機能や、性能、装着するメディアの状況などの情報を自動的にやり取りし、使い勝手が大幅に改善される。

[1017]第3に、録画・再生制御装置がそれぞれの機器の接続状況を把握していることにより、例えば録画

予約の空き時間を利用したブレンディング編集などのより高度なスケジュール編集も可能になる。

[1018]第4に、録画・再生制御装置が、ユーザの再生、予約設定等の要求を判断し、所定の録画・再生装置に再生の指示を出すとともに、表示装置に対してその録画・再生装置の映像・音声出力を表示するように指示することにより、煩雑な操作が不要となる。

[1019]第5に、録画・再生装置と録画・再生制御装置がそれぞれ双方方向の通信が可能な通信手段を具備することにより、録画・再生制御装置が録画・再生装置から情報を受け、複数の録画・再生装置の機能や、性能、装着するメディアの状況や、それぞれの機器の接続状況を把握することにより、よりスムーズに高度な録画スケジュール編集を行うことが出来る。

[10110]第6に、マスター側の録画・再生装置だけに計時手段とスケジュール管理の機能を持たせることにより、多くのスレーブ側の録画・再生装置の構成を簡易化出来、全体として低コストな録画・再生システムを構築できる。

[10111]第7に、複数の録画・再生装置および表示装置間の映像・音声信号の入出力をマトリックススイッチで切替制御することにより、個々の録画・再生装置および表示装置の入出力端子を併用することなく指定の装置間での映像・音声信号の再生・表示やダビングを行うことが可能とするものである。

[図面の簡単な説明]

[図1] 本発明の第1の実施の形態および第4の実施の形態における録画・再生制御装置と録画・再生装置、表示装置の接続関係を示す図

[図2] 本発明の第1の実施の形態および第4の実施の形態における録画・再生制御装置の構成を示す図

[図3] 本発明の第1の実施の形態および第4の実施の形態における録画・再生装置の構成を示す図

[図4] 本発明の第1の実施の形態および第4の実施の形態における表示装置の構成を示す図

[図5] 本発明の第2の実施の形態における録画・再生制御装置の構成を示す図

[図6] 本発明の第2の実施の形態における録画・再生装置の構成を示す図

[図7] 本発明の第2の実施の形態における録画・再生制御装置と各録画・再生装置との間の制御情報のやり取りを示した図

[図8] 本発明の第3の実施の形態における録画・再生装置の構成を示す図

[図9] 本発明の第3の実施の形態および第5の実施の形態における録画・再生制御装置と録画・再生装置、表示装置の接続関係を示す図

[図10] 本発明の第5の実施の形態における録画・再生装置の構成を示す図

[図11] 本発明の第3の実施の形態および第5の実施

の形態における録画・再生のスケジュールを説明するための図

[図12] 本発明の第6の実施の形態におけるリモート制御装置、録画・再生制御装置、録画・再生装置、表示装置の接続関係を示す図

[図13] 本発明の第6の実施の形態におけるリモート制御装置の構成を示す図

[図14] 本発明の第6の実施の形態におけるマスター側の録画・再生装置の構成を示す図

[図15] 本発明の第6の実施の形態におけるスレーブ側の録画・再生装置の構成を示す図

[図16] 本発明の第7の実施の形態におけるリモート制御装置、録画・再生制御装置、録画・再生装置、表示装置の接続関係を示す図

[図17] 本発明の第7の実施の形態における録画・再生制御装置の構成を示す図

[図18] 本発明の第7の実施の形態における録画・再生装置の構成を示す図

[図19] 従来例における遠隔制御装置の構成図

[符号の説明]

101 分送器

102～104 録画・再生装置

105 録画・再生制御装置

106 表示装置

110～113、118～120 映像・音声信号線

114～117 制御信号線

201 送信部

202 録画スケジュール管理部

203 操作入力部

204 表示部

211～213 信号線

301 録画・再生装置

302 識別コード設定手段

303 受信部

304 チューナ

305 機器制御部

306 計時手段

307 映像・音声記録再生部

308 スイッチ

309 文字生成部

310 映像・音声信号線

311～314、317～319 制御信号線

315、320、323 音声信号線、

316、321、322、324 映像信号線

401 表示装置

402 受信部

403 表示制御部

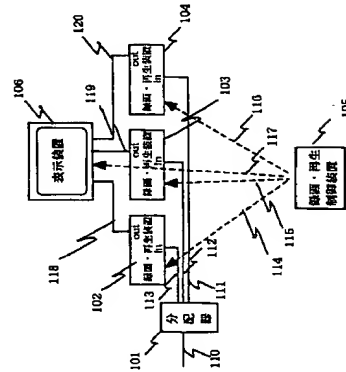
404 音声出力部

405 文字生成部

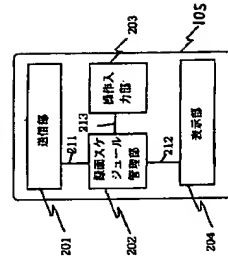
- 406 スイッチ
407 映像表示部
410、414~417、420、422 制御信号線
411~413 映像・音声信号線
418 音声信号線
419、421 映像信号線
501 送受信部
502 録画スケジュール管理部
503 操作入力部
504 表示部
511~513 信号線
601 録画・再生装置
602 識別コード設定手段
603 受信部
604 チューナ
605 機器制御部
606 時計手段
607 映像・音声記録再生部
608 スイッチ
609 文字生成部
6001 メディア種別検出部
610 映像・音声信号線
611~614、617~619、631 制御信号線
615、620、623 音声信号線
616、621、622、624 映像信号線
701 録画・再生装置
702 識別コード設定手段
703 受信部
704 チューナ
705 機器制御部
706 時計手段
707 映像・音声記録再生部
708 スイッチ
709 文字生成部
710、726~730 映像・音声信号線
711~714、717~719、732 制御信号線
715、720、723 音声信号線
716、721、722、724 映像信号線
801 分配器
802~804 録画・再生装置
805 録画・再生制御装置
806 表示装置
810~813、817~825 映像・音声信号を流す映像・音声信号線
814~817、826 制御信号線
901 録画・再生装置
902 識別コード設定手段
903 送受信部
904 チューナ
905 機器制御部

- 1416、1420、1423 音声信号線
1416、1421、1424 映像信号線
1501 分配器
1502~1504 録画・再生装置
1506 リモート制御装置
1507 録画・再生制御装置
1508 表示装置
1510~1514、1517~1125 映像・音声信号を送信映像・音声信号線
1515、1516 制御信号線
1601 録画・再生制御装置
16002 送受信部
1603 受信部
1605 録画スケジュール管理・機器制御部
1606 時計手段
1608 スイッチ
1609 文字生成部
1612~1614、1618、1619、1626、1627 信号線
1622 映像信号線
1624、1632~1635、1636~1639 映像・音声信号線
1625 制御信号線
1701 録画・再生装置
1700 スイッチ
17001 メディア種別検出部
17002 送受信部
1704 チューナ
1705 機器制御部
1707 映像・音声記録再生部
1710、1726 映像・音声信号線
1714、1717、1731、1732、1733、1734 信号線
1715、1720、1723 音声信号線
1716、1721、1724 映像信号線
1801 指定事項入力部
1802 録画識別入力部
1803 操作部
1804 テープ情報入力部
1805 制御部
1806 記憶部
1807 送信コード生成部
1808 送信部

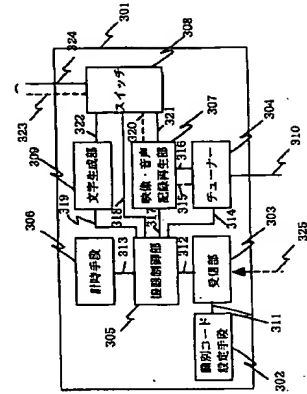
[図1]



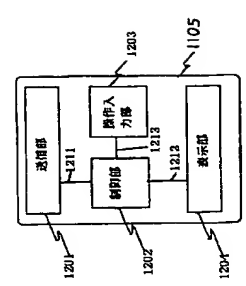
[図2]



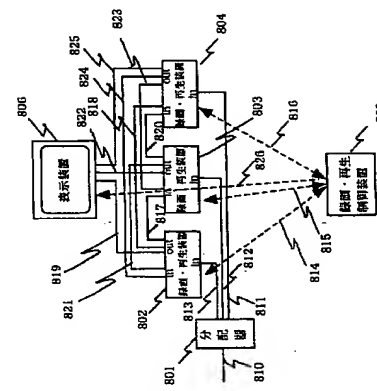
[図3]



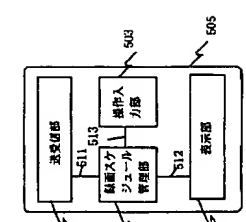
【図13】



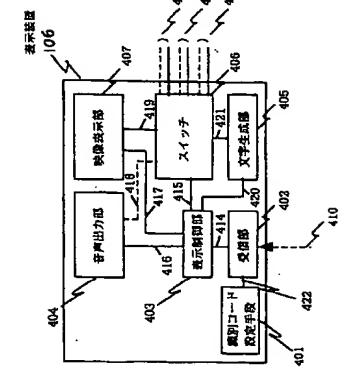
【図9】



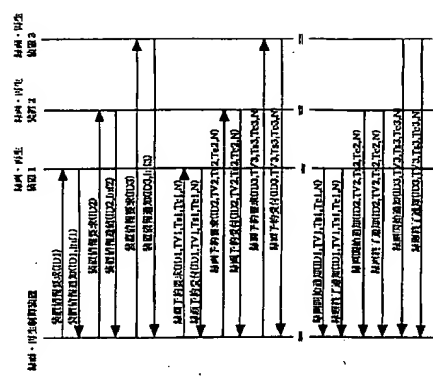
【図5】



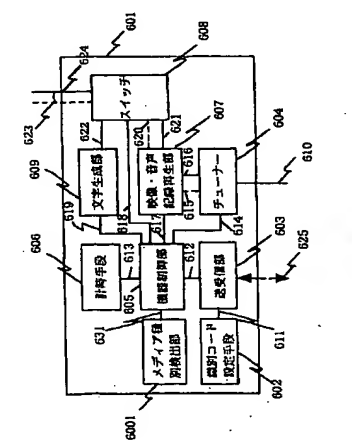
【図4】



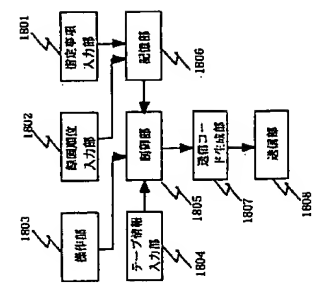
【図7】



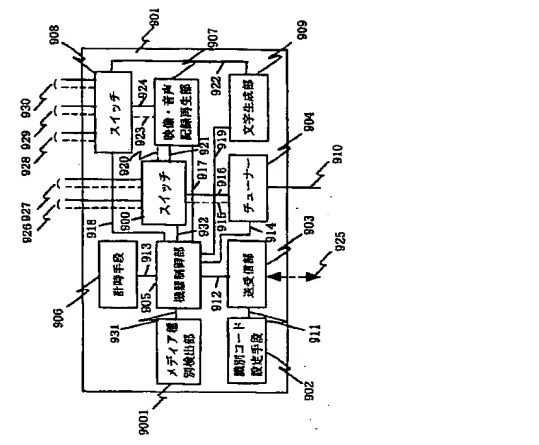
【図6】



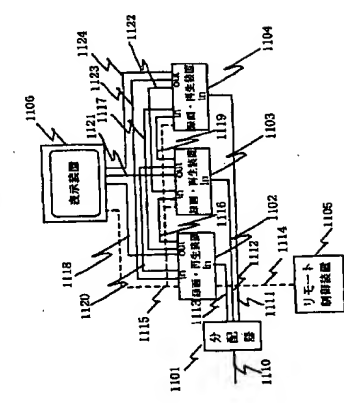
【図19】



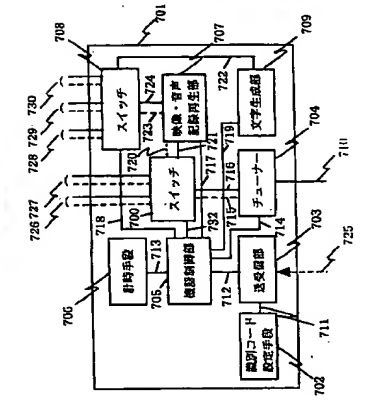
【図10】



【図12】



【図8】



【図18】

